THE
RAILWAY GAZETTE
A Journal of Management, Engineering and Operation
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An index to the seventy-sixth volume of THE RAILWAY GAZETTE *covering the issues from January 2 to June 26, 1942, has been prepared, and is now available free of charge on application to the Publisher*

GOODS FOR EXPORT

The fact that goods made of raw materials in short supply owing to war conditions are advertised in this paper should not be taken as indicating that they are available for export

NOTICE TO SUBSCRIBERS

Consequent on further paper rationing, new subscribers cannot be accepted until further notice. Any applications will be put on a waiting list which will be dealt with in rotation in replacement of subscribers who do not renew their subscriptions

POSTING "THE RAILWAY GAZETTE" OVERSEAS

We would remind our readers that there are many overseas countries to which it is not permissible for private individuals to send printed journals and newspapers. THE RAILWAY GAZETTE *possesses the necessary permit and facilities for such dispatch.*

We would emphasise that copies addressed to places in Great Britain should not be re-directed to places overseas

REDUCTION IN SIZE OF PAGE

To economise in paper our readers will observe a slight reduction in the size of THE RAILWAY GAZETTE *in that the size of the page has been reduced from 9 in. × 12 in. to 8¼ in. × 11½ in. The type area of the page remains the same, namely, 7 in. × 10 in., but the surrounding margins have been reduced. This of course detracts from the appearance of the paper, but is one of the exigencies of the war*

TO CALLERS AND TELEPHONERS

Until further notice our office hours are:
Mondays to Fridays 9.30 a.m. till 5.30 p.m.
The office is closed on Saturdays

ERRORS, PAPER, AND PRINTING

Owing to shortage of staff and altered printing arrangements due to the war, and less time available for proof reading, we ask our readers' indulgence for typographical and other errors they may observe from time to time, also for poorer paper and printing compared with pre-war standards

Too Many Committees

THE modern practice of referring all matters requiring a decision to a committee has now reached such dimensions that it is proving a serious impediment to the national effort. Attention was drawn in *The Daily Mail* last week to the extent to which the "committee craze" has affected Whitehall. There can be no doubt that throughout the official and business life of the country at the present time there is far too great a tendency to shelve responsibility by reference to committees, which themselves are apt to breed sub-committees and sub-sub-committees. The prevalence of reference to committee is by no means confined to the Civil Service. In an article dealing with the work of the Railway Clearing House, which was published in our June 26 issue, it was shown that sixty years ago 100 meetings a year were held at the Clearing House. Twenty years later, the number had risen to some 400 meetings, and by 1939 the total of meetings approached the 2,000 mark. If ample time could be afforded, no doubt a good case could be made for bringing to bear on a problem the combined knowledge and experience which members of a committee can provide: but a great drawback to the undue extension of the system is delay in reaching a a decision, and the time spent in compiling and reading voluminous minutes, and the immobilisation in the aggregate of an undue amount of executive manpower.

Mr. Daniel Willard

The death, which occurred on July 6, of Mr. Daniel Willard, Chairman of the Baltimore & Ohio Railroad, will be considered a personal loss by railwaymen throughout the United States. He was one of the few in the railway world who can claim to have risen from permanent-way labourer to Chairman of one of the world's largest railways. Mr. Willard was born in 1861 in Vermont, and had to leave the Massachusetts Agricultural College when only eighteen, due to serious trouble with his eyes, and worked as a labourer on the track of the Central Vermont. Shortly afterwards he joined the Boston & Maine as a fireman and later transferred to what is now a part of the New York Central system. He was laid off, and joined the Soo Line as a brakeman on a construction train. Through the positions of fireman, driver, trainmaster, and district superintendent, he reached the rank of superintendent. He became Assistant General Manager of the Baltimore & Ohio in 1899 and was later Vice-President and General Manager of the Erie; then he was Vice-President of the Burlington for six years. Mr. Willard returned to the Baltimore & Ohio as its President in 1910 and as recently as 1941 he relinquished the Presidency and became Chairman of the board. He was greatly beloved and trusted by his staff, amongst whom he was usually referred to as "The Boss"; throughout the American railways he was considered the Dean of American Railroad Presidents and by many was known as "Uncle Dan." His scheme of management—employee co-operation—has stood the Baltimore & Ohio in good stead through the difficult years of trade depression and road competition. Mr. Willard was a great friend to this country and he assured a visiting British railwayman in his office at Baltimore in July, 1939, "If war really comes to your country we shall be together again and we will see this thing through with you to the end as we did last time." Humility and humanity were his characteristics and he stood for all that was best in a railway career, of which he was the peerless embodiment.

Canadian Pacific Air Lines

Some indication of the magnitude of the operations of the air companies now comprising the Canadian Pacific Air Lines Limited is given by the fact that their combined air mileage flown is approximately 5,000,000 miles annually. The ten acquired companies comprise Canadian Airways Limited, Quebec Airways Limited, Dominion Skyways Limited, Arrow Airways Limited, Yukon Southern Air Transport Limited, Ginger Coote Airways Limited, Wings Limited, Prairie Airways Limited, Starratt Airways & Transportation Limited, and Mackenzie Air Service Limited. The services are inherently complementary to, and not competitive with, the established transcontinental lines in Canada and the United States. Some account of the activities of the organisation are given in an article at page 56, and from the map there published it will be seen that the routes serve both the vast areas of the Canadian hinterland, and also certain of the older and more populous districts. An important contribution to the British Commonwealth Air Training Plan is the management of six Air Observer Schools in Edmonton (Alta.), Malton (Ont.), St. Johns and Lorette (Que.), and Winnipeg and Portage La Prairie (Manitoba); and one Elementary Flying Training School at Cap de la Madeleine (Quebec). Repair plants, operated by the company under the plan, include two at Winnipeg, one

at Moose Jaw, and one at Cap de la Madeleine. Moreover, the training schools and overhaul plants maintained in co-operation with the British Commonwealth Air Training Plan have been, and are being, greatly expanded. Transport of military equipment and personnel is being effected under contract, and mapping and other defence work is being performed. Although in the present emergency military requirements must take precedence, essential commercial transport services are being maintained, and the Canadian Pacific Air Lines will doubtless play no unimportant part in post-war development.

Indian War Resources Committee and Transport

The Indian War Resources Committee, which consists of members of the Governor-General's Executive Council and which deals with problems of war production, transport, communications, finance, and so forth, is actively pursuing one of the principal recommendations made by the American Technical Mission which recently visited India, that concerned with the rationalisation and regimentation of industry and the more efficient use of engineering and munition workshops. The India Office states that the Jute Mills Association has been called on to prepare a rationalisation scheme to save transport. The group of recommendations concerned with transport and communications has been dealt with by the committee, which has sanctioned a scheme for the improvement of telegraph and telephone facilities at the cost of Rs. 8 crores, and also has in hand measures to expand facilities and to expedite clearances at ports. Other matters on which the committee is working include steps to improve the working of transport in military depots and to expedite the provision of locomotives and rolling stock, and to develop road and rail transport. Plans for the production of power alcohol are being proceeded with energetically and twelve plants have been ordered from the United States. Detailed inquiry into the wasteful use of transport by Government departments has been initiated, and special progress reports have been called for on expansions in the steel industry and production of aluminium; measures for the better conservation of motor spirit, rubber, and tin are under consideration.

Taxation and Profits in U.S.A.

The effect of present-day American taxation on the profits derivable from railway operation is well illustrated by the 1941 report of the Norfolk & Western RR. Out of a net operating revenue of $56,537,972, no less than $32,139,362 was required for federal, state, and local taxes, an increase of 76·9 per cent. over the corresponding figure for 1940. This tax burden represented 27 per cent. of each dollar of gross operating revenue, 118·2 per cent. of the net income left after deduction of taxes, $1,563 for every employee on the line, and $22.85 for each share of common stock, on which the dividend paid was $15. As a result, whereas the gross operating revenues of the N. & W. increased by $14,948,293 over those of 1940, or by 14·2 per cent., and the operating expenses were only 10·5 per cent. up or $6,058,658, the net income decreased by $4,189,973, or 13·4 per cent. The position will be worsened in 1942 by the wage increases recently granted, which, including holidays with pay, are estimated to add $6,250,000, or 16·0 per cent., to the company's annual payroll. The Reading Railroad's 1941 report tells much the same story. Direct taxes, totalling $9,899,351, represented a sum of $27.121 for every day in the year, $561 for every employee, $3.53 on each share of capital stock, 12·4 cents out of every dollar collected from patrons of the line, and a proportion of 28·6 cents to every dollar disbursed in salaries and wages to 17,634 employees.

Public Relations

Although perhaps the name is more recent than the idea, a public relations organisation of some kind, by which contact may be maintained with the public, is considered nowadays to play an essential part in the conduct of almost any important undertaking. In many cases it is held sufficient that this contact should be established through the press and through other recognised forms of publicity: all Government departments now maintain a public relations staff, whose duty it is to act as the mouthpiece of the department, in issuing statements to the press, and in putting its policy before the public through posters, slogans, and other channels of publicity. This, of course, is only half the picture: the successful maintenance of public relations depends not only upon informing the public of those facts which it is necessary for it to know, but also upon receiving the public's own views about those facts. This double aspect is realised fully by the London Passenger Transport Board; the organisation which has been set up by that body for learning public opinion, as well as for disseminating information, is described elsewhere in this issue. Has any other Public Relations Department of a railway administration so complete a system for classifying and recording all points of contact with the public?

Wartime Traffic Trends

One of the greatest difficulties with which the railway system of any country at war has to contend is the fact that wartime requirements often cause traffic to flow in considerable bulk along routes which in peacetime are non-existent or of minor importance. To some extent preparation for this is made in any offensive or defensive programme, but the trend of war may result is unexpected and fundamental changes in the direction demand. In this country, for example, it was generally thought during the period between the declaration of war and the opening of the German offensive on the Western Front that one of the main difficulties of the British railways would be the operation of traffic for the supply of a British Expeditionary Force fighting in France. With the experience of the last war in mind, extensive arrangements were made for this purpose and functioned very satisfactorily during the comparatively brief period when a relatively small British Army was in France. The whole strategic situation changed with the fall of France in 1940 and the beginning of the battle of the Atlantic, with the result that traffic was required to flow along channels other than those of ordinary peacetime commerce, and in bulk and in directions which were scarcely foreseen in 1938 and 1939. Preparations had naturally been made for the use of alternative routes in the event of air-raid damage and, on occasion, these alternative routes have proved of great importance, but they were prepared as *alternatives* to existing routes of capacities often far below those of wartime requirements, and have often been needed as additions to pre-war facilities, leaving nothing to fill their place as alternatives. Considerable ingenuity has been displayed in the provision of improved signalling, and in the conversion of sidings to running loops, with the result that line capacities have been increased enormously with relatively little expenditure of labour and material.

Travel Control in Germany

Second class railway travel has expanded greatly in Germany for many months past as a result of the abundance of money in the hands of the public, and also because the comparatively sparse train service still in operation is heavily overcrowded, particularly in the third class accommodation. Everyone who can afford the second class fare gladly pays the extra sum in the hope of being able to secure a seat, rather than travelling standing in the third class. The Reichsbahn authorities have endeavoured to arrest this trend, but apparently without much success, and various limitations in the issue of second class tickets are now stated to be under consideration. One proposal is that second class tickets should not be issued for journeys under 100 km. (62 miles). Another proposal is to admit travellers to the second class only when proof is submitted that the journey is vital to the war interest (a system already introduced in the General Gouvernement of Poland), but this is considered impracticable, since enforcement would require too cumbrous a machinery for checking the movement of passengers and intending passengers. All restaurant cars in Germany were withdrawn on June 1, excepting for a few Mitropa dining cars on some international trains, and have been replaced by ordinary carriages so as to relieve overcrowding. The use of first and second class sleeping cars has been under strict control since June 15, leaving the third class unaffected. The obvious desire to keep all second class accommodation (there is no first class on internal services) for travel of war importance is limited by the great difficulty of administering any general system of control.

American Freight Records

American railways are entitled to congratulate themselves on the efficiency with which they have faced defence demands to date. In 1941 the total movement of freight was 475 billion ton-miles—the heaviest ever handled in a single year, exceeding the previous 1929 record by 6·2 per cent., and the 1940 total by 27·3 per cent. The peak month was October, when the average handling was equivalent to moving 1,069,000 tons a mile every minute. In every direction records were created. In 1929 the average weight of freight carried in each train was 804 tons; in 1941 it was 915 tons, 66 tons more than in 1940. As compared with 1921, in twenty years gross ton-miles per train-hr. have increased by 110 per cent. from 16,555 to 34,684.

The average daily movement of all freight cars, which includes the time of loading and unloading, has been worked up to 42·6 miles—a high record, and an increase of 65 per cent. in 20 years—and another record in 1941 was 795 net ton-miles a freight car a day, an increase of 131 over 1940, which itself established a record. As to locomotive power, a high record was created in 1941 with a daily average mileage of 116 for the entire stock of engines, and a low record was the average of only 111 lb. of fuel for the movement one mile of 1,000 tons of freight. Between the beginning and end of 1941 freight cars awaiting repair were reduced from 108,972 to 62,200, or from 6·8 to 3·7 per cent. of the total stock.

Signalling Aids the War Effort

The important works for improving traffic facilities at a number of places have necessitated considerable signalling alterations and improvements. To enable these to be effected as rapidly as possible a high class priority has been granted, as the work is recognised as being essential to the war effort. The new signalling in the Severn Tunnel was described in our June 19 issue, and, at page 60 of this issue there appear particulars of the work done elsewhere on the G.W.R. in connection with the provision of additional running loops. To some extent this may be taken as representative of installations carried out on certain other lines for the same purpose. Concentration of control in the minimum of signal-boxes has been obtained by adopting long-distance point operation by hand generator, of which the G.W.R. had already made much use, and by installing power-worked distant signals and track circuits. There are, of course, differences between the various layouts, but the diagram accompanying the article typifies the general principles adopted, which have given every satisfaction in practice.

Public Relations for Provincial Buses

HERETOFORE, public relations organisations have been established mainly, if not exclusively, by large centralised undertakings such as London Transport and the main-line railways. An entirely separate problem is presented by such an industry as that of the large provincial bus companies, for, although this is a well-knit industry, it has been found desirable for the activities of a particular area to be conducted by a local company in intimate touch with local needs, and enjoying a large measure of autonomy. Such central organisations as exist are concerned chiefly with finance, legal matters, and bulk purchases of stores, and not with the direction of local policy and local goodwill. There are many advantages in this arrangement, from the viewpoints of both the bus operator and the passenger, but, heretofore, there has been the disadvantage that the provincial bus industry has lacked a representative voice to proclaim its combined achievements and speak with authority of its difficulties—two important aspects in the maintenance of good public relations. To meet such a need a committee has been established with the title of the British Omnibus Companies Public Relations Committee, under the presidency of Mr. Sidney Garcke, consisting of the representatives of upwards of 50 bus companies working in England, Scotland, and Wales. The number of buses involved is already nearly 12,000.

At present the member companies comprise those provincial operators associated with the British Electric Traction Co. Ltd., with the Scottish Motor Traction Co. Ltd., and with Balfour, Beatty & Co. Ltd., as well as a number of prominent "independents" such as the Red & White group. National prestige publicity was inaugurated in *The Times* of July 15 and will be extended to the influential organs of the national and provincial press, as well as the local press in the areas covered by the companies concerned. A perusal of the advertisements which have been prepared for the national campaign shows that there is a marked similarity to the series which has been inserted by the main-line railways in the trade and technical press for more than two years. A standard sign bearing a single-deck coach and the words "British Buses" has been designed and will be inserted on all publicity matter, both national and local, issued by or on the authority of the committee. Other aspects of public relations are being handled centrally from 88, Kingsway, London, W.C.2. We understand that the efforts of the committee will be correlated to those of others working with similar objects, and contact to this end has already been established with the main-line railways and with London Transport. In the circumstances of modern times we welcome this step, which should give the public an adequate knowledge of the achievements of, and the services rendered by, the large provincial bus companies, and earn for these companies that measure of public goodwill which they deserve.

Crampton's 5-to-1 Rule

ONE of the many problems with which the designer of locomotives has always been faced is that of how to utilise the steam produced by the boiler to the greatest advantage; the production and distribution of the steam indeed have always been one of the chief aims in planning the layout of the boiler and the valve mechanism. The boiler may be designed with the utmost care, its proportions may be ample, freedom of water circulation assured, plenty of steam space provided, and an excellent firebox; yet with all these attributes there may still be something lacking in the performance of the boiler as a steam generator as well as in the combustion of the fuel. Much has been achieved in this connection by what are known as front-end experiments, and it is certain that in laying out the steam piping and valve events, what has to be kept in mind is not only the admission but also the exhausting of the steam; indeed, more stress may be laid on the second than on the first of these points.

The late Mr. H. A. Ivatt stated with truth that "live steam would find its way *anywhere*, but a free and straight path *must* be provided for the exhaust." He advocated, and carried out in his own practice, the policy of the big boiler and the moderately-sized cylinder, urging that a smaller but adequately proportioned cylinder plentifully supplied with steam was much to be preferred to a larger one which, although exerting a greater tractive force, might throw too great a strain on the boiler for steam at times of stress. At a meeting of the Institution of Mechanical Engineers he remarked that "A big cylinder without plenty of steam was like a large purse with very little money in it," an apt simile which no doubt met with a ready response from his hearers. Mr. Ivatt realised to the full the desirability of disposing of the exhaust steam with the least impediment possible. He used in many of his engines large open-backed Richardson-type slide valves which allowed the exhaust steam to escape to the atmosphere with very little hindrance on the way. Mr. G. J. Churchward was another and, indeed, an outstanding advocate of freedom for the exhaust, and frequently urged the advisability of this, remarking in turn that it was easy to get the steam into the cylinder but the important thing was to get it out. It was the work he did at Swindon that in this connection placed the Great Western engines in the forefront of British locomotive practice for many years. Chapelon in his book and elsewhere called attention to Crampton's theory and practice in designing locomotive cylinders and connections. He advocated a ratio between the cross-sectional area of the cylinder and that of the steam piping of 5 to 1, but for one reason and another this has seldom been followed in what may be called modern practice. Mr. Bulleid has, however, done something in this direction in designing his "Q1" 0-6-0 locomotives which we understand are showing excellent steaming qualities and freedom from back pressure.

Standard Station Signs

IN many secret hiding-places all over Great Britain, carefully concealed from enemy eyes, lies a hoard of station nameboards. These boards are of a great variety of shapes and sizes, and materials of which they are made comprise enamelled iron, cast iron, timber, and other useful war requisites. Why should they not all be turned out in the present war emergency to serve as salvage, and at the same time the newly appointed committee that is dealing with post-war reconstruction problems include in its agenda the standardisation of railway station signs, and nameboards in particular? Hitherto every possible variation has been tried in the form and position of station nameboards, and the traveller in search of his destination, anxiously scanning the platform from the window of his compartment, often had to arbitrate between the rival claims of Bovril, Gentlemen, Hovis, Tea Room, and the station name (if he had succeeded in selecting the last-mentioned from its many rivals), before deciding whether he really had reached the place at which he intends to alight. Although individual railways have carried out a certain amount of standardisation of signs within their own borders, no attempt has been made at a system, common to all railways, of standardising the lettering, size, shape, colour, and location of station signs; and the present time offers a unique opportunity, with the aid of art, psychology, and a hundred years of experience, to mend our ways in this matter.

Of all station signs the most important, of course, is the station nameboard. The ideal is not a single nameboard, of great size, on each platform, which may enable the passenger in a non-stop express to spot the name as he dashes through the station at 80 m.p.h., but a series of smaller nameboards of uniform size, shape, and lettering, placed at a uniform level in relation to the platform, that can be seen simultaneously from all parts of a standing train; in this matter the London Passenger Transport Board sets an excellent example, and the London,

Midland & Scottish Railway had also made a good beginning in the same direction when the war broke out. The distinctive shape of board is in order that the passenger may know exactly what to look for when stopping at an unfamiliar station, and an additional advantage is some distinctive markings, as, for example, a border of black-and-white chequerwork round the name. When the shape and marking have been settled, it is essential that they should be considered as copyright, and that no advertisements should be allowed to imitate either. The passenger is also concerned to know where to look for the station name, and this suggests a uniform height above platform level, say, 7 ft. 6 in., which is sufficiently high to be read above the heads of passengers standing on the platform, and at the same time is readable from the off side as well as the near side of the compartment. Uniformity in colour of lettering and background is desirable, as also in the size and design of the letters; Gill Sans type has few rivals for clarity, and letters 6 in. deep would probably meet the case. For the greatest ease in reading from the train, the sequence of nameboards should be fixed parallel to the track.

The importance of other station indications is that they need to be seen by the traveller when he is actually on the platform; this suggests the desirability of projecting signs, at right-angles to the length of the platform, and so visible from any part of it. A further advantage of projecting signs is that they do not distract the attention of the passenger in the train who is looking for the station nameboard. In order that these projecting signs are not all dead in line, so that one obscures another, there is a good case for grouping the signs at different heights, according to the particular type of accommodation that they indicate. Next in importance to the station name is the location of the booking office and the cloak room; after the station nameboards these signs should have the highest and most distinctive position. At a lower level should come such indications as General Waiting Room, Ladies' Waiting Room, Gentlemen, Refreshment Room, Dining Room, Tea Room, and so on; and the lowest group should be the signs showing the position of the stationmaster's office, porters' room, and other parts of the staff accommodation, which might continue to be, as they now are generally, plates affixed to doors at not more than waist height. This matter of uniformity concerns not only the station signs, but also those on rolling stock, such as the class indications on carriage doors, and the smoking and non-smoking signs on carriage windows; the last-mentioned are at present particularly confusing, as each company has its own different shape, size, and colour of non-smoking label, and the ban on the smoker on one line may closely resemble the invitation to light up on another. Standardisation may impose a dead hand on development in some directions, but it is of considerable value in others.

Indian Railways in 1940-41

THE year ended March 31, 1941, was in many respects unusual, and in some ways a record one for Indian Railways. First and foremost, gross earnings of all railways collectively reached a record total of Rs. 126·36 crores (£94,770,000) though working expenses remained substantially as for the past nine years, namely at Rs. 73·18 crores (£54,885,000). The net earnings were thus Rs. 53·18 crores (£39,885,000) and this was also a record figure by about Rs. 9 crores, and some Rs. 14 crores higher than in 1939-40. The corresponding figure for the gross earnings of State-owned lines was Rs. 111·94 crores (£83,955,000), an increase of Rs. 14·29 crores as compared with the 1939-40 total. This £10¾ million increase in the course of a year was due, in the main, to the impetus given to railway traffic by the war, in the form of a heavy increase in military traffic and the carriage of commodities used for war purposes. Shortage of shipping for coastwise traffic also diverted heavy tonnage to the railways, as instanced by the fact that rail-borne tonnage of coal across India to Bombay increased in the year under review by no less than 570 per cent. as compared with 1939-40. After meeting all charges including depreciation and interest on capital, the year's working showed a gain of Rs. 18·46 crores (£13,845,000). Of this surplus, Rs. 12·16 crores were placed to the credit of the general revenues of the Central Government; Rs. 8·14 crores went in payment of contributions accruing in respect of 1940-41, and Rs. 4·02 crores towards arrear contributions in previous years. The balance of Rs. 6·30 crores was credited to the Railway Reserve Fund. Both passenger and goods traffics contributed to this substantial general improvement, passenger earnings rising from Rs. 30·47 crores in 1939-40 to Rs. 34·14 crores in the year ended March 31, 1941. The corresponding figures for goods earnings were Rs. 72·56 crores and Rs. 81·48 crores respectively. The operating ratio during the latter year was 47·4 per cent. excluding and 58·6 including depreciation.

Altogether, 225 miles of new line were opened during the year, but on the other hand 328 route-miles were closed; the total route mileage was thus reduced by 103 miles. The principal new lines opened were the Sind Right Bank Feeder Lines, 84 miles in length and of 5 ft. 6 in. gauge, and five short metre-gauge lines in various parts of India totalling 132 miles. The lines closed included some eight branch lines, and the permanent way thus released was added to that available from stock and from relaying, for military railways. These branches were selected for dismantling as being insufficiently remunerative and as serving areas provided with other forms of transport. The route-mileage at the end of the year totalled 41,052, for all railways and gauges. No new construction was undertaken during 1940-41 and work was suspended on the Mudkhed—Adilabad line in Hyderabad State. The Bengal-Dooars Railway was acquired by the Government on December 31, 1940, and was handed over to the Eastern Bengal Railway administration for working. Notice was also given of the Government's intention to purchase the Assam-Bengal and Bombay, Baroda & Central India Railways on December 31, 1941.

Considerable improvement was effected in the transit of express goods and parcel traffic by accelerating trains and eliminating handling and transhipment delays. Meanwhile, further measures were taken to secure economy in operation. Train services were reduced, but through trains had additional stops inserted in their schedules to offset any inconvenience caused by this reduction. Further steps were taken to improve locomotive and rolling stock availability, by revising engine links, extending "pooling," and securing quicker turn-round of stock. Improved types of third class carriages were introduced during the year embodying six compartments and greater security for women passengers. Three large railway workshops were handed over entirely for munitions production, and all others contributed to the same end in addition to carrying on their own and, in some cases, "foreign" railways' repairs. The Ajmer metre gauge workshops of the Bombay, Baroda & Central India Railway had in hand during the year the construction of nine new "YB" class engines for the Assam-Bengal Railway and completed four "A" class 4-4-4 type tank engines for their own system. Orders were also received for ten new "XT1" class broad-gauge locomotives for the North Western Railway and for two "YB" class for the Bengal & North Western metre-gauge line. Seven air-conditioned first class coaches were built in the North Western Railway workshops for the principal mail-train services on that system. Track research work was continued with special reference to oscillation trials with Pacific type locomotives.

In train accidents, such as collisions and derailments, not caused by deliberate train wrecking, 26 passengers were killed and 65 injured during the year; the total number of passengers carried was 604,000,000. The fatalities were thus 0·04 and the injuries 0·11 only per million passengers carried. Of the 26 total fatalities, 20 occurred in an accident to the down Frontier Mail near Jekot on the Bombay, Baroda & Central India Railway, when it collided with an up goods train; 14 passengers were injured. The worst accident of the year happened to the down Dacca Mail, however, when it was derailed, due to the malicious removal of a rail, between Chuadanga and Jayrampur Stations on the broad-gauge main line of the Eastern Bengal Railway; 41 persons were killed and 75 injured.

AMERICAN ARTICULATED LOCOMOTIVE DEVELOPMENT.—A feature of modern American steam locomotive building is the continued development of articulated units of immense power. Of the 350 steam locomotives ordered by railways of the U.S.A. and Canada during 1941, 120 were articulated. The most popular wheel arrangement is the 4-6-6-4, of which 48 were put on order, 20 for the Union Pacific; the whole of 40 4-8-8-2 locomotives, of the cab-in-front type, were for the Southern Pacific; the Norfolk & Western, ordering 16 2-8-8-2 locomotives, is alone among American railways in still using compound propulsion; and the Chesapeake & Ohio initiated a new wheel arrangement with 10 engines of the 2-6-6-6 type. Five Union Pacific mammoths of the 4-8-8-4 type and the experimental Pennsylvania 4-6-4-4 completed the list of orders for articulated locomotives. In the non-articulated realm it is significant that only two locomotives were ordered with as many as five axles coupled, both of the 2-10-4 type; the preference was almost exclusively for eight-coupled engines, and in particular for 4-8-4s, which numbered 104 out of a total of 230. Of these the biggest order has been 60 for the Canadian National (including 25 for the Grand Trunk Western lines), and the most interesting is the turbine-driven 4-8-4 on order for the Pennsylvania. Of six-coupled engines the most important order was 37 4-6-2s for the Canadian Pacific. These 1942 constructions thus continue the lines of development of 1941, when, of engines ordered in 1940, 51 of the total of 130 completed were articulated (18 were 4-6-6-4, 15 4-8-8-4, 10 2-6-6-6, and 8 2-8-8-4), and of the remaining 79, 46 were 4-8-4, 20 were 4-8-2, and 7 2-8-4.

The Scrap Heap

Word Vandalism

Language is after all only a means to an end. That is perhaps why it is always changing imperceptibly.

With the spread of education during the last century, in some quarters the lust for grammatical accuracy has been apt to confuse the means with the objective. Purists are followed by revivalists with the inevitable swing of the pendulum. At the same time, rigid grammarians are apt to confuse style or taste with their often half-reasoned rules!

I confess to a preference for the variations born of usage rather than I have for the rigid rule-maker. For above all, I do feel that language was made for man and not man for language.

This, then, is my apology for raising through the courtesy of The Railway Gazette an admittedly contentious subject.

For nearly 100 years, and more in some cases, railways have called Time Tables by those two words. Comparatively recently the purists have changed these words, with admitted accuracy, to Passenger Services. Yet it will be many years before one goes to the hall porter of an hotel to ask him for a "Passenger Services" instead of a "Time Table."

Take the case of "Railway Engine," a well-used term, but yet one which would debar a prospective member of a Locomotive Model Railway Club from passing his entrance examination. This is a case where accuracy is winning, and thus we are likely to lose the simpler and more euphonious word "engine" for the more ponderous term "locomotive." I know that "engine" is a generic term. I know also that "locomotive" is a trifle more accurate. But I am one of those that don't really mind any more than I mind when someone looks at a horse and says "What a beautiful animal."

A "goods truck" has now become a "freight wagon." But at least there is only one way of spelling truck!

With all these changes in the short space of 100 years in this little country, no wonder America is changing the meaning of words far more rapidly, so that "truck" in that country now means only a vehicle which we call a lorry and which runs only on the road.

Recently the purists and revivalists have changed Ladies and Gentlemen to Women and Men, rather as if some inferiority complex should think that the somewhat fulsome manners of our grandfathers were a sign of decadence.

Non-smoking compartments are now labelled "No Smoking." Heated arguments have taken place. On the one side the non-smoking partisans say that it is in keeping with the adjectival marking of the class on the same compartment; while the purists, on the other hand, say that non-smoking is not a word at all. And so it goes on.

If it is admitted that language is purely a means to an end, then the psychological effect of usage should not be forgotten, and equally important is it to remember that novelty in language, when conveying messages to the general public, is a vice rather than a virtue. The value of a trade mark is based on its sameness and longevity, and not on its ability to sway this way and that to every changing fashion.

Let our language be a language of the people rather than a scholar's language, as by so doing we shall not only preserve the well-worn and understood words which one has used since childhood's days, but also add new and virile words to our vocabulary.

Surely the great British Empire, and the English-speaking nations, are old enough, strong enough, large enough, and cultured enough to be able to develop their vocabulary without having recourse to languages long since dead. C. G.

* * *

Explained

The airman had overstayed his leave, but eventually he was brought back to camp under escort and was taken before the C.O.

"Well, my man," said this worthy, "and what explanation can you give for this offence?"

The airman looked at him nervously and replied, "Well, sir, I went to the station to get my train back to camp, and I saw a notice which said, 'Is your journey really necessary?'."—*From "The Weekly Telegraph."*

* * *

Darkness and Light

On a recent occasion, writes a correspondent, I made a journey by express train from London in the course of which two long tunnels and other shorter ones were passed through. No lights were provided in the carriages, and, as a consequence of this, one of the passengers in the compartment, an elderly lady, was reduced to a condition of extreme nervousness owing to the long spells of complete darkness. Later on the same day I lunched in a room which was flooded with sunlight, but in spite of this twelve large electric ceiling lights were kept going the whole time. Apparently the railway company and the hotel proprietors held opposite views on lighting economy.

* * *

It was night. The sirens had sounded and the retired railwayman was on his way to the outdoor shelter, with his braces trailing behind him. His wife followed and accidentally trod on the braces which, when released, gave the old man a sharp smack in the small of the back. "You carry on, darling," he said. "They've got me!"—*From the "Great Western Railway Magazine."*

* * *

A total of 184 acres of land on the right of way of the Chicago & Eastern Illinois has been planted for "victory gardens." The railroad has made unused land on its right of way available to employees and others who wish to turn the ground into useful production. Most of the land being worked is planted as truck gardens, although quite a few acres have been planted in corn.—*From the "Railway Age."*

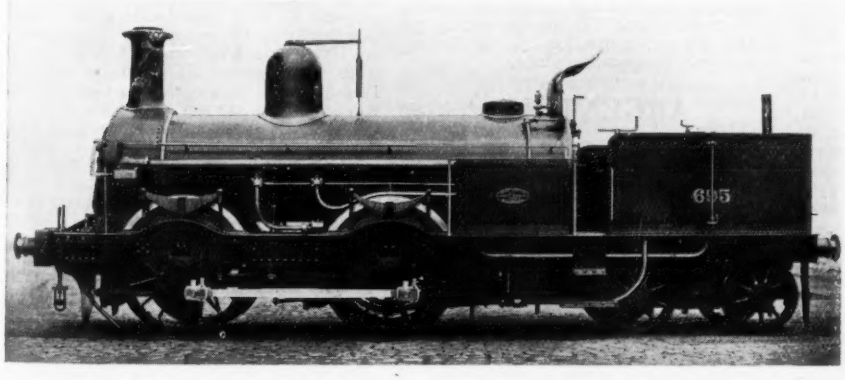
* * *

Courtesy Titles

Among the glittering shams and pretentious insincerities of the pre-war world (in which we were all as unhappy, it seems from some sections of the press, that the war makes quite a pleasant change), was the practice of labelling certain railway carriages "ladies only." We recently saw inscribed upon the windows of a compartment the less controversial announcement "For Women Only." True, the distinction of being publicly classified as a lady was open to all persons of the female sex and might therefore be considered as desirable as free university education, or similar reforms, but it has evidently been decided that it is more in the interest of a united nation for the invidious title to go altogether. We look forward to the day when railway holiday guides will include lists of seaside landwomen offering accommodation to visitors, but we think it will take us some time before we relish public speakers opening their addresses with the patronising formula, "Mr. Chairman, My Lord, men and women." B. K. C.

"As a matter of fact I've been reciting Gray's 'Elegy' all day, but nobody's noticed the difference"

[*Reproduced by permission of the proprietors of "Punch"*]



A Midland Railway 0-4-4 *tank engine built by Beyer Peacock & Co. Ltd. in* 1869

OVERSEAS RAILWAY AFFAIRS

(*From our correspondents*)

CANADA

Review of C.P.R. by President

Mr. D'Alton Coleman, President of the Canadian Pacific Railway, in a recent interview, said that the greatest problem which faced his company today was one of manpower; although, he added, he did not anticipate so far the engagement of large numbers of female staff. Mr. Coleman said that the C.P.R. had reached the peak of operations which existed in 1928-29, but that there was still a surplus capacity; there was no shortage of locomotives, and a number were on order at the present time. He expressed the view that, as the result of the company's previous planning, there was sufficient rolling stock to meet any demand which might be made. He did not think that there was any necessity for rationing passenger travel on a mileage basis. Mr. Coleman said that to some extent sea transport governed the volume of traffic handled by the railway; as it was a question of whether goods carried to the coast could be moved from there. There were not the same storage facilities which obtained in the United States, and goods were being moved under a permit system, which took into account their movement overseas; if that were not the case, the railway would have been working under a very much greater strain.

UNITED STATES

Long Island Records

For the sixth time in ten years, the Long Island Railroad, an electrically-operated subsidiary of the Pennsylvania Railroad, took first place in 1941 among the superintendents' divisions in the annual safety contest of P.RR. employees, with an average of only 6.64 accidents to staff in every million man-hr. of work. Of the major main-line regional units of the Pennsylvania, the New York Division did best, with 7.96 accidents in every million man-hr. A Long Island record of another kind has been created by Mr. Robert A. Linden, a resident in Flushing, who on April 2 purchased his 625th consecutive commutation (or season) ticket, marking the completion of 52 years of continuous daily travel over the 10½ miles between Murray Hill and New York, and the beginning of the 53rd.

Escalators in New York

To the ten escalators already in use at the Pennsylvania Station in New York, three more have been added recently. One leads from platform No. 10 up to the exit concourse at the west end of the station, and serves passengers who have arrived in Long Island electric trains on tracks 18 and 19; the second leads from platform No. 8, and is for Long Island and Pennsylvania passengers arriving on tracks 15 and 16; the third, from platform No. 11, serves Long Island passengers arriving on tracks 20 and 21.

New Baltimore Freight Yards

Further details are now available of the immense freight scheme to be carried out by the Pennsylvania Railroad, in order to concentrate the handling of freight in and around the city of Baltimore, first announced in the June 26 issue of THE RAILWAY GAZETTE. In the new Bay View yard there will be three inward receiving and sixteen inward classification tracks, with a total capacity of 389 and 812 bogie wagons, respectively; six outward receiving and 21 outward classification tracks for 358 and 1,064 wagons; and one track for cabooses, two for wagon repairs, one for engines, and two yard running tracks. The aggregate wagon-operating capacity thus will be 2,623 bogie wagons; and just over 27½ miles of track will be laid, of which 8¼ miles will be electrically equipped. The new Canton yard will be smaller, with 30 storage tracks accommodating 600 wagons, 2 receiving tracks for 86 wagons, four car-cleaning tracks for 66 wagons, and 9 repair tracks for 80 wagons, for which 9¼ miles of line are being laid. One advantage of segregating, at Bay View, the traffic for Baltimore proper from the import and export freight, and of moving the latter between there and the new Canton yard in complete trains, is that much street congestion in the Canton area of Baltimore will be relieved.

Movement of Iron Ore

The movement of iron ore on the Great Lakes, which is always very heavy, is seasonal, due to the ice on the lakes, and rarely starts before mid-April. This year, however, records for half-a-century were broken by sending the ice-breakers out to cut channels to the Soo Canal as early as March 20, and on the following day one large iron company sent fourteen of its vessels, which had been wintering at ports on Lake Erie, out from Cleveland, Toledo, South Chicago, Ashtabula, and Huron, to load ore. On March 28 the ore carrier *J. H. Sheadle* tied up at her pier in Cleveland with the earliest cargo of iron ore on record, having left Lake Huron on March 27 after being held by ice for a day or so in the Straits of Mackinac. The previous record of 65,204,600 tons of ore moved on the Great Lakes during 1929 was easily beaten by the 80,116,360 tons in 1941, and it is hoped this year to exceed 90,000,000 tons, to which amount at least 5,000,000 tons will be contributed by the unusually early opening. A number of railways are closely concerned in the movement of the ore, both from the mines to the lake ports at which the ore is shipped, and from the receiving ports to the iron and steel areas; the operations of certain of these lines are confined almost exclusively to ore traffic. A typical example of an ore line in the former category is the Duluth, Missabe & Iron Range, and in the latter the Pittsburgh & Lake Erie, which are among the 16 railway systems, with 1,075 route miles of line, 3,696 track-miles, 723 locomotives, and 45,482 wagons, controlled by the United States Steel Corporation alone.

ARGENTINA

Railway Commission Appointed

A special railway commission has been appointed by the Government to co-operate with the Ministry of Public Works in framing and carrying out the scheme for a general re-organisation of the railways; as reported in our April 24 issue, this was foreshadowed in the decree of March 5 last, which authorises an increase in tariffs. The re-organisation will include a readjustment of services, and amendments to the working regulations, in order to improve the economic position of the companies and to place their finances on a stable basis. The Director-General of Railways is the Chairman of the commission, which will consist of four Argentine members and four representatives of the foreign-owned railways. The commission has been empowered to enlist the co-operation of railway personnel in matters affecting the staff, such as the scale of salaries and wages, and the system of promotion; and the employees will be called upon to nominate representatives for this purpose.

Rolling Stock Credit for Railways

A bill proposing the opening of a credit for 20,000,000 pesos for the purchase of rolling stock for the Argentine State Railways—of which sum 10,000,000 pesos has already been spent—has been sent to Congress by the Ministry of Public Works. The bill mentions the urgent necessity for the replacing and augmenting of rolling-stock to enable the state railways to cope with traffic requirements. For this reason the Government had authorised the expenditure of half the amount in question without waiting for authority from Congress.

BRAZIL

Carriage and Wagon Building

Apart from their insignificant mileage, compared with the larger territory they have to serve, the railways have been struggling for years against a shortage of rolling stock, which has hampered considerably agricultural and industrial development. Based on North American and European statistics, which show four goods wagons for every km. of line, Brazil, with its 33,521 km. of railways, should have some 143,000 wagons in traffic; in fact, it has no more than 60,000, or less than 2 wagons a km. This disparity not only makes for rapid deterioration of existing material, due to its overworking, but also calls for steps to make good the shortage, and to provide rolling stock for the extensions which must be made during the course of many years to come if the great unexploited territory is to be developed.

The construction of plant for the building and repairing of rolling stock is an undertaking which obviously cannot produce dividends immediately, but a brief examination of the situation will serve to elicit many of the facts. At present there are only three private firms occupied in the manufacture and repair of railway vehicles. Of a total of 35,000 wagons in traffic, only 4,000 are of local manufacture; the number of wagons awaiting repair is always high. The choice of location for vehicle-building works is important. Of the 33,521 km. of railways, approximately 75 per cent. are either under Federal Government concession or are owned by the Federal Government; the remaining 25 per cent. are either leased or owned by the various state governments. The States of São Paulo, Matto Grosso, Minas Geraes, and Rio de Janeiro possess 19,345 km.; Santa Catarina, Paranà, and Rio Grande do Sul, 6,907 km.; and the remaining states approximately 7,269 km. This distribution indicates that the best place for the installation of a wagon-building works is in the Federal District, close to the Central Railway, and to Rio de Janeiro, where raw materials can be received conveniently, and rolling stock can be shipped to the north whence the railways do not connect with the centre and the south. Furthermore, through transport of wagons by rail is not always convenient due to changes of gauge.

The fall in local currency during recent years tends to make the importation of anything, except absolute necessities, more

and more difficult, and, as any alteration in valuation can only tend to prejudice exports, it is fairly evident that an effort will be made to stabilise exchange at its present level. The inference is that all which is possible will be done to build up industries inside the country, rather than to stimulate a flow of imports which cannot be maintained. Recently President Vargas has done much to dispel any idea that the influx of foreign capital is unwelcome, and, although such capital, perhaps, has not enjoyed the best of dividends during the last few years, such a state of affairs has not been peculiar to Brazil, and does not mean that future ventures are condemned to the same fate.

Indications are that the government would view favourably the installation of a carriage and wagon works in Brazil, able to commence production at a minimum rate of 30 vehicles a month, and to repair some 300; and that it would offer, probably, exemption of import duties on all material and machinery imported for the purpose. No doubt it would exempt the industry also from all federal and municipal taxes during a reasonable period, and probably would assume the obligation of purchasing all rolling stock produced, once price and quality were able to compare favourably with imports.

SPAIN

The Sierra Nevada Railway

A project has been approved by the Ministry of Public Works for the extension of the Sierra Nevada Railway from Granada to the Sierra Nevada. This narrow-gauge electrified line runs at present from the city of Granada to Maitena, and it is proposed to prolong it, along the upper valley of the river Genil, as far as Guarnon, an extension of some ten kilometres. The estimated cost of the prolongation is 3,000,000 pesetas. At present the existing track is being renewed.

The Madrid Metropolitan

The Madrid Metropolitan Underground Railway celebrates this year its twenty-fifth anniversary, the company having been constituted in 1917. It began with a capital of 10,000,000 pesetas, subscribed wholly in Spain, and, despite the fears expressed at the time, the undertaking has proved prosperous. There are now 11 lines, totalling 22½ km. (14 miles), with further extensions under construction. In 1941 the company carried more than 220 million passengers, and the receipts totalled 38,500,000 pesetas.

Coal Production

In 1941 Spain produced 7,629,825 tons of coal, 1,170,132 tons of anthracite, and 823,345 tons of lignite, or 9,623,302 tons in all. In 1935, the production of Spanish coal amounted to 7,443,705 tons, but in that year 1,104,494 tons of coal were imported from Great Britain, and this import has now practically ceased. In 1941 the Spanish railways consumed 2,331,152 tons of coal.

Madrid-Avila Electrification

The Madrid press has recently devoted preferential attention to the approaching completion of the Madrid-Avila electrification, which promises not only to facilitate communications between the two cities and Segovia, but also to afford easy access to the mountains of the Guadarrama range for summer holiday retreats and winter sports. The electrified line between Madrid and Avila is 121 km. (75 miles) in length, all double track, and there are 63 km. (39 miles) of single track between the junction at Villalba and Segovia, a total of 183 route km. (114 route miles). With 41 km. (25 miles) of sidings and secondary tracks, the total trackage electrified amounts to 345 km. (214 miles). The overhead contact line has required 1,800 tons of copper and there are 11 converter substations.

Traffic will be hauled by 13 electric passenger locomotives and 24 electric goods locomotives, and a fast service of motor trains will be run, for which 30 rail-car units are on order. It is calculated that 70 steam locomotives will be liberated, on the inauguration of the electric service, for work on other parts of the system. Most of the material and equipment used in the electrification is of Spanish origin, and only 24.5 per cent. of the whole has had to be imported from abroad.

BOHEMIA & MORAVIA

State Railways in 1941

Provisional figures published in Prague show an upward trend for 1941, as compared with 1940, in the results of the State Railways of Bohemia & Moravia. This was due largely to better traffics, and to the increases in goods rates and passenger fares, which were introduced on January 1, 1941, and May 1, 1941, respectively, to bring them to the level of those in force in Germany. The economic position has improved greatly, and it is anticipated that the railways will be able to balance their account with the help of only part of the traffic tax. Working receipts rose by 30 per cent., as compared with those for 1940, and working expenditure rose by 18·7 per cent. Receipts from passenger and baggage traffic were about 44 per cent. higher, and from goods traffic 22 per cent. higher, than in 1940; compared with 1939, they were greater by 115 per cent. and 66 per cent., respectively. The number of *tonnes* of express goods and baggage coveyed showed an increase of 34·2 per cent. over 1940; and 63·6 per cent. more *tonne-km.* were recorded. In spite of restrictions on travel, more passengers were conveyed in 1941 than in the previous year, and the figures show an increase in numbers of 4·2 per cent.; total passenger-km. exceeded those of 1940 by 18·4 per cent.

SWEDEN

Air Transport in 1941

Sweden's national air-traffic undertaking returned for 1941 a gross profit of Kr. 1,048,964, a reduction from that of 1940 of over 50 per cent. Depreciation was reduced to Kr. 910,076, compared with Kr. 1,962,518 in 1940; thus the resulting net profit of Kr. 138,888 was the same as for the year before. As the profit balance from the previous financial year was Kr. 270,435 (against Kr. 145,434 in 1940), a total of Kr. 409,323 remained at the board's disposal, compared with Kr. 284,323 in the preceding year. It is said that of this amount, Kr. 270,434 will be used as profit balance for 1942, and Kr. 13,888, or 10 per cent. of the new net profit, is to be allocated to reserves. The dividend paid on the share capital of Kr. 3,084,000 was 4 per cent.; no dividend was paid in 1940. Operating results for 1941 show an all-round decrease compared with 1940, except in the case of the conveyance of mail, but the report points out that, under existing circumstances, the results may be regarded still as fairly satisfactory. 652,514 miles were flown in 1941, compared with 1,014,825 miles in 1940; the number of passengers conveyed decreased from 31,787 in 1940 to 20,987 last year, but the weight of air mail carried increased from 505,140 lb. in 1940 to 552,290 lb. in 1941.

DENMARK

Danish State Railways in 1940-41

Some information, further to that given in our February 6 issue, is available concerning the results of Danish State Railways working during the year ended March 31, 1941. Railway passenger services had been reduced by 50 per cent., by the end of that period, from those in operation before the war; ferry services by 34 per cent.; and shipping services by nearly 41 per cent. The number of train-kilometres run was 29·2 per cent. lower than in 1939-40, and 36 per cent. lower than in 1938-39. The drop in numbers of passengers carried of 17 per cent., already recorded, was due mainly to a decrease over 1939-40 of 6,300,000, or 19 per cent., in the number conveyed on the Copenhagen suburban lines; the reason for the latter decrease is said largely to be the curtailment of services to one train each way on every electrified suburban line, other than during peak hours, when the normal 20 minute-interval service was maintained. During the year under review, the electric trains of the Copenhagen suburban system accounted for 42 per cent. of all railway journeys made in Denmark, and for 12 per cent. of the passenger-kilometres run; and the total suburban system accounted for three-fifths of all journeys made in the country. In the provinces, the number of passengers conveyed decreased from that of the previous year by 2,700,000.

More First Class Passengers

Concurrent with the decrease in the number of passengers conveyed was an increase in the number of first class travellers, probably caused by the passing boom in trade which has been fostered by Germany. The number of passengers who travelled first class during 1940-41 was 15 per cent. greater than in 1939-40. Of the total number made during the year in question, about 1·7 per cent. were first class journeys, but it must be borne in mind that the Copenhagen electric trains, as well as almost all local and branch-line trains in the provinces, are one class only (that which in Denmark is known as the common class). Thus, of journeys of under 31 miles (50 km.), only 0·4 per cent. were first class, but journeys of the latter category represented about 4 per cent. of those over the 31-mile limit.

Increase in Goods Traffic

As already reported, goods traffic increased considerably during the period under review. The number of *tonnes* conveyed was 7,670,000 (not 767,000,000, as recorded in our February 6 issue); goods receipts increased over those of 1939-40 by Kr. 42,300,000, to Kr. 96,900,000 due partly to the 25 per cent. increase in rates from July 1, 1940. Of various commodities, 438,100 *tonnes* of turf were conveyed; 434,300 *tonnes* of hard coal; 301,100 *tonnes* of brown coal; 147,200 *tonnes* of sand, gravel, etc.; and 140,800 *tonnes* of cereals, beet, and potatoes. On the other hand, less fertiliser and less fodder were carried than in the previous year; the latter class of goods was in smaller demand due to a great many cattle and pigs having been slaughtered; the number of livestock transported increased considerably. Baggage traffic receipts were less by 4 per cent. than those of 1939-40, due largely to the reduction in the number of motor vehicles conveyed on the ferry routes. Receipts from the carriage of mails decreased by 0·7 per cent.

C.P.R. Air-Line Activities

The Canadian Pacific air services are making a valuable contribution to the work of the British Commonwealth Air Training Plan, in addition to maintaining a widespread network of air lines

AS a result of air-line purchases made during the past year, the Canadian Pacific Railway Company now ranks as one of the world's largest commercial air-line operators. The air services now associated with the C.P.R. include practically all the air transport companies west of the Maritimes to the Pacific Coast and north of the trunk route of Trans-Canada Air Lines (the Canadian National Railways associate) to the Arctic. This vast aerial network has more than 100 aircraft, more than 1,000 flying and ground personnel, and an annual flying mileage of five million miles. The lines acquired stretch throughout Canada, as shown on the accompanying sketch map, but most of them are located in the north and north-west regions. The names of the individual companies and the head offices of each are as follow :—

Canadian Airways Limited, Winnipeg.
Quebec Airways Limited, Montreal.
Dominion Skyways Limited, Montreal.
Arrow Airways Limited, Le Pas, Manitoba.
Wings Limited, Winnipeg.
Prairie Airways Limited, Moose Jaw.
Yukon Southern Air Transport Limited, Vancouver and Edmonton.
Ginger Coote Airways Limited, Vancouver.
Starratt Airways & Transportation Limited, Hudson, Ontario.
*United Air Services, Edmonton.

Northern air transport is now an important self-supporting industry which accounted for about 20 million lb. of freight last year. The volume of air freight has grown rapidly, rising from 2·3 million lb. in 1931 to a record figure of 26·2 million lb. in 1939.

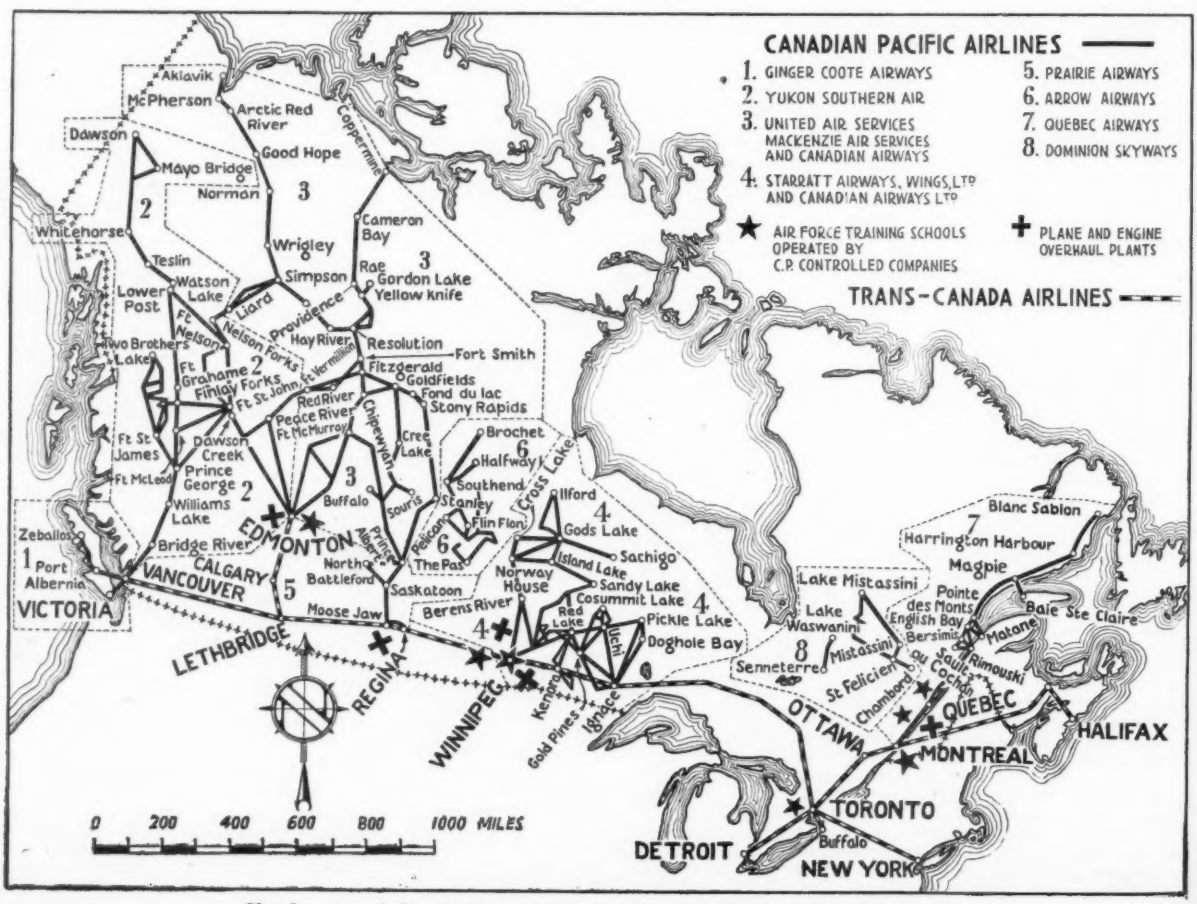
Much of the Canadian mineral output owes its existence to the air services operating through northern areas. Aircraft have transported complete mining equipment, parts of power dam structures, dismantled tractors and lorries, whole dog teams, and even horses and cows. The "flying box car" of the Canadian Airways has handled a record load of 6,700 lb. of freight on a single trip. Originally 75 per cent. of the revenue of northern air lines came from freight, about 5 per cent. from mail, and the balance from passenger traffic. Most of the mining communities are now well established, and, in addition, there has naturally been a decrease in mining development due to wartime restrictions, so that at present about 60 per cent. of the total revenues comes from passengers, 7 per cent. from mail, and about 33 per cent. from freight. It is quite common for these northern air lines to move practically a whole township more than once a year. Mining salaries are relatively high and in a community of, say, 300 persons, it is not unusual to find perhaps 250 move out for a holiday once, twice, or thrice a year.

By far the largest single unit is Canadian Airways Limited, which accounts for about half the total northern air business handled and had a gross income in 1940 of upwards of a million dollars. This pioneer air line, which was founded in 1926 by the late Mr. James E. Richardson, of Winnipeg, as Western Canada Airways, laid the foundation in 1928 for the present transcontinental air-mail route from Winnipeg to the Rockies.

* Operating joint services of Canadian Airways and Mackenzie Air Service Limited

Air Services Distances

The following are a few approximate distances between



Sketch map of the air lines maintained by Canadian Pacific subsidiaries

main points served by the network of air lines controlled by the Canadian Pacific :—

	Miles
Edmonton to Aklavik	1,570
Vancouver to Fort St. John	1,400
Edmonton to Coppermine	1,225
White Horse to Edmonton	1,000
Rimouski to Harrington Harbour	700
Prince Albert to Goldfields	485
Winnipeg to God's Lake	425
Winnipeg to Pickle Crow	285
Montreal to Quebec	150

In certain areas the services offered by these companies duplicate and even triplicate one another. One of the principal changes made since the C.P.R. took over control was the establishment of United Air Services for the joint operation of Canadian Airways and Mackenzie Air Services from Edmonton to almost the northernmost limits of Canada. Immediately it secured control of these companies, the Canadian Pacific planned to eliminate uneconomic and duplicate services, to stabilise the rate structure, and generally to place the industry on a sound financial basis. No doubt joint rail-air tariffs will be introduced in the future, as the air lines purchased by the Canadian Pacific are in no way competitive with the railway but are rather complementary to it.

The operations of the various air lines taken over by the railway company fall into five main divisions, as follow :—

On the west coast there are the operations of Ginger Coote and Yukon Southern.

The second division lies in the area north of Edmonton, to Aklavik, covering northern Alberta and the North-West Territories.

In the central area are the operations of Prairie Airways, which link up the northern towns with the T.C.A.

To the east, in Manitoba and around the Great Lakes, are the operations of Starratt, Wings, and Canadian Airways.

Still farther east, in Quebec, are the operations of Quebec Airways and Dominion Skyways.

It is probable that eventually these operations will be consolidated, but at present any such plans are held up by wartime conditions. Moreover, because control has been acquired so recently, sufficient time has not yet elapsed to permit of a sufficiently close survey of operations or facilities. Dealing with such consolidation, Mr. D. C. Coleman, President of the Canadian Pacific Railway Company, in his address to the shareholders at the annual meeting in Montreal on May 6, made the following statement: " The reorganisation of the ten air line companies in which your company holds a controlling interest is proceeding, and under the title of Canadian Pacific Air Lines Limited the constituent lines are being integrated into a co-ordinated system. Certain of the routes now being operated, particularly those to points in the Yukon adjacent to Alaska, are of great importance to National Defence, and it is anticipated that their inclusion in a large well-knit organisation will strengthen them for the services they may be called upon to perform." Canadian Pacific Air Lines Limited announced on April 15 that work was to begin at once on constructing three new airports between Edmonton and Yellowknife (North-West Territories) which will make possible all-year-round aerial contact with the northern points. These will be at Fort McMurray (Alta.), Fort Smith (N.W.T.), and Yellowknife (N.W.T.). At present planes equipped with skis operate during the winter months and in the summer use pontoon landing equipment. The new airports will permit landing with wheels throughout the year.

Equipment

The general practice is for these northern air lines to adopt twin-engined aircraft where traffic and operating conditions warrant. However, single-engined units often prove much more adaptable for certain types of private-hire services to the trapping and mining areas. Most of the planes used in the northern service are convertible three ways—skis, wheels, and floats. The craft used include Beechcraft, Norsemen, Barkley, Grow, Junkers, de Havilland, Bellanca, Stinson, Lockheed, and others.

Air Training Scheme

While these Canadian Pacific air lines have interesting possibilities for the expected post-war boom in air transport, the present major task is to maintain and stabilise necessary northern air schedules and then to devote all other efforts to assisting the Commonwealth Air Training Scheme. The air lines taken over by the railway already operate seven training and observer schools and five engine and plane overhaul plants, and it is expected that under Canadian Pacific management these will shortly be expanded. The present training schools are at Edmonton (Alberta), Malton (Ontario), and Cap de la Madeleine (Quebec); and the observer schools at Winnipeg (Manitoba), Portage La Prairie (Manitoba), St. Johns (Quebec), and Lorette (Quebec). Plants for the overhaul of aircraft and engines for the Air Training Plan are in operation at Winnipeg (two), Moose Jaw, and Cap de la Madeleine (Quebec).

In addition to securing equipment and trained personnel by purchasing these aviation companies in Northern Canada, the Canadian Pacific Railway undertook the initial work for the establishment of the Atlantic ferry bomber service from Canada to Great Britain in the autumn of 1940. The experience secured in organising and operating this Atlantic ferry service, one of the world's great transoceanic flying feats, will undoubtedly prove of great value to the C.P.R. in its future air transport operations.

Reclaiming Manganese Steel Trackwork by Welding

U.S. methods for building up worn manganese steel alloy trackwork

THE use of cast manganese alloy steel castings for trackwork in Great Britain has had only a limited vogue, partly due to the preference in this country for the built-up type of crossing, and partly in consequence of trouble experienced with cracking of the castings, but in the United States this type of crossing has been used on a very extensive scale. The chief reason is the prevalence of railway level crossings in the U.S.A., many of them at right-angles or nearly so. In a crossing of this type, the wheels have to cross the flangeways at right-angles, instead of at an acute angle, and the battering suffered by the right-angled crossing is therefore much greater than that which has to be sustained by the nose and wing-rails of an acute crossing. In America the trouble is increased by the weights carried by individual axles, which in many locomotives and tenders reach and exceed 30 tons. The characteristic property of a manganese alloy containing 12 to 14 per cent. of manganese, although its Brinell hardness when new, after quenching, is not greater than that of an ordinary high carbon or medium manganese rail steel, is that it is susceptible in an exceptional degree to work hardening, which begins to take place directly cold work is performed on it. With manganese-alloy rails or crossing castings work hardening begins directly the first traffic passes over them, and may put the original Brinell hardness number of 200 or thereabouts up to 500 or more on the running surface; below this the hardening effect, on a diminishing scale, may be felt through ½ in. or more of the steel until the normal structure is reached well down the rail-head. As the upper surface wears down, also, the work-hardening effect penetrates deeper and deeper into the casting.

Ensuring Sound Castings

The demand for manganese steel trackwork has encouraged a good deal of research in the United States with a view to eliminating defects in the castings, and much has been done, by changes in design and improved standards of manufacture, as well as by the use of X-ray equipment capable of revealing defects in metal up to 5 in. thick, to ensure the maximum soundness and length of life possible. Close attention is also paid to such matters as moulding sand and chemical analysis of the steel, as well as to physical tests to determine its tensile strength, resistance to impact, ductility, and hardness, as compared with earlier days in which a manganese casting was usually accepted on the basis of its

manganese content, without too narrow enquiry (due to the difficulty of preparing tests on such material) into its physical properties. As with ordinary rails, the claim is often made that the manganese-steel trackwork made in the early days of manganese-alloy steel stood up to traffic better than the modern product, despite all the improvements in manufacture that have taken place in the meantime, but that completely ignores the increase that has taken place during this period in axle-loads and speeds, and to a far greater degree in the United States than in Great Britain, with a corresponding increase in the severity of the punishment to which the track is subjected. The more severe the conditions the sooner are defects in the castings likely to take effect in producing cracks; and there is little doubt that if the earlier American cast crossings had had present-day conditions to withstand from the beginning of their service, their average life would have been shortened to such a degree as to leave no doubt as to the superiority of the present-day product.

Extent of Work Hardening

An additional attraction to the American permanent way engineer of the manganese-alloy steel casting is that methods have now been evolved for building up this difficult class of steel by welding. This is the subject of an article in the February issue of *Railway Engineering & Maintenance* by Mr. D. B. Rice, Welding Engineer to the Manganese Steel Division of the American Brake Shoe & Foundry Company. The worst difficulty to overcome has been the tendency of the metal in the casting to flow under impact to an extent exceeding the ductility of the material, so that incipient cracks are produced; indeed, work hardening of manganese steel can continue to develop to a degree at which all ductility is lost, though this would not occur until a Brinell hardness considerably exceeding 500 had been reached. Where weld metal has been deposited on work-hardened surfaces, not infrequently under traffic the welds have peeled from the parent steel, due to these incipient cracks, or to unsoundness in the metal, such as sand or slag inclusions, gas porosity, or cavities caused by shrinkage. Microscopic examination of worn manganese crossings has revealed fine cracks in the work-hardened surface extending $\frac{1}{4}$ in. into the steel, and work-hardening effects to a total depth of $\frac{3}{4}$ in. The greatest hardness has been attained in those parts of the running surface actually in contact with the wheels, but even portions of steel extruded by the flow of the metal as a kind of lip at the edge of the worn castings have work-hardened to a considerable degree. In adding weld metal it is necessary to take into account the full extent of the work-hardening in the body of the casting, and also the heat at which the welding operation is conducted, for excessive heat is likely to have undesirable results in increasing hardness and decreasing ductility by the precipitation of manganese-iron carbides. For the reasons stated, it is recommended that in welding up manganese steel track, the work-hardened steel should first be removed, and then that the total heat of welding should be kept as low as possible.

Removing the Work-hardened Steel

If time permits, the work-hardened layer should be removed by grinding. As weld failures usually occur in the areas of a crossing which are subjected to the heaviest shocks and load concentrations, in these areas the work-hardened steel should be cut out to a depth of at least $\frac{1}{4}$ in., and the grinding should be done so as to leave a shelf or ledge mainly horizontal, rather than an inclined surface, to receive the deposited metal, for manganese steel welds have greater strength in compression than in shear. A simple indication as to whether sufficient work-hardened material has been removed can be obtained with a centre-punch, which will make very little impression on a steel with any greater hardness than 400 Brinell, whereas at 250 or less ordinary punch-marks are made with ease. If the use of oxy-acetylene or arc cutting is necessary instead of grinding, to expedite the work, control of heat is best accomplished by making cuts of short duration and immediately quenching the cut areas and surrounding steel with cold water. The torch or arc-cut surfaces should then be cleaned of oxide and scale, and at least another $\frac{1}{8}$ in. depth of metal should be removed by grinding to eliminate any metal that may have been affected by heat concentration. If the portion of the crossing that is being built up is inaccessible to a grinding wheel, the alternative is a power or hand hammer and chisel, which will not be able to do more than remove the scale.

Electrodes and Amperage

For the welding, nickel-manganese electrodes are used. By careful choice in the diameter of these electrodes, as well as of amperage, it is possible materially to reduce the amount of heat to be absorbed by the adjacent metal of the casting, with a corresponding reduction in the amount of carbide precipitation, and, therefore, of disturbed structure beneath the weld. Two or more layers of deposited metal applied with small diameter electrodes furnish a kind of protective pad of nickel-manganese steel to absorb the high temperatures created by the larger electrodes that must be used for the major part of the building-up operation, and the more so as the nickel content of the electrode metal inhibits the precipitation of carbides within the weld metal itself, which is not affected by the heat of the upper layers. The electrode diameters recommended by Mr. Rice range from $\frac{1}{8}$ in. to $\frac{1}{4}$ in., and the d.c. amperage that he suggests for the work is 80-100 with $\frac{1}{8}$ in., 90-125 with $\frac{5}{32}$ in., 110-150 with $\frac{3}{16}$ in., and 135 to 160 with $\frac{1}{4}$ in. electrodes, in the case of bare rod, and from 5 to 20 amp. less with coated electrodes. With a.c. and coated rod the amperage recommended is the same as for d.c. with bare rod. Beads deposited by $\frac{1}{8}$ in. and $\frac{5}{32}$ in. electrodes should be about $\frac{1}{2}$ in. wide, and $\frac{3}{16}$ in. and $\frac{1}{4}$ in. electrodes should deposit beads from $\frac{3}{4}$ in. to 1 in. in width; no bead should exceed $\frac{3}{16}$ in. in thickness. Before each bead is deposited, the metal of the casting proper should be carefully cleaned with a wire brush, as accumulations of oxide, bits of the coating, and other foreign matter may prevent proper fusion and cause the welder to use a higher amperage than is desirable, so generating excessive heat in the weld.

Finishing Off

Although the customary practice is followed of building the weld up higher than its finished dimensions, to allow of grinding down to a straight and level surface, with manganese steel, the excess height must be kept strictly within limits, as the high spots work-harden so rapidly under traffic that permanent stresses may be set up in this way. It is recommended that each bead be thoroughly peened by hammering, back from the filled crater to the starting point, before adding successive beads, and that several trains be allowed to pass over the finished weld before it is finally ground to level. Running edges should be ground to a radius of about $\frac{5}{8}$ in., as this permits a considerable flow of the metal under traffic before a sharp edge is formed and any flaking away takes place. In extremely cold weather, preheating of the casting to about 200 deg. F. is advised, for if welding is attempted at zero temperatures or lower, there is a tendency to cracking both in the casting and in the applied metal. A warning is finally given of the risks of hurrying the work of welding a metal of such sensitive characteristics as manganese alloy steel, as overheating may be disastrous. Experience must be used to decide whether each individual casting shall be repaired *in situ*, or whether the nature and extent of the work to be done makes it more desirable to remove the castings from the track to allow of uninterrupted attention, or whether welding would be so uneconomical that scrapping is called for. Although this American experience relates to manganese alloy steel castings, there is little doubt that the same principles could be applied to the repair of noses and wing-rails in built-up crossings of manganese rails, which have been the more usual method in this country of using this type of steel in track layouts.

Electrification of Spanish Branch Line.—It is understood that the re-opening and electrification of the line from Calahorra to Arnedo (not Amedo, as reported), which was recorded in our July 3 issue, is to be extended to Prejano, 20 miles from Calahorra. Before the closing of the line in 1935, the service consisted of two mixed trains each way daily and 1¾ hr. was allowed for the 20-mile journey.

London Passenger Transport Board Public Relations Office

An organisation which allows an expression of views by both sides

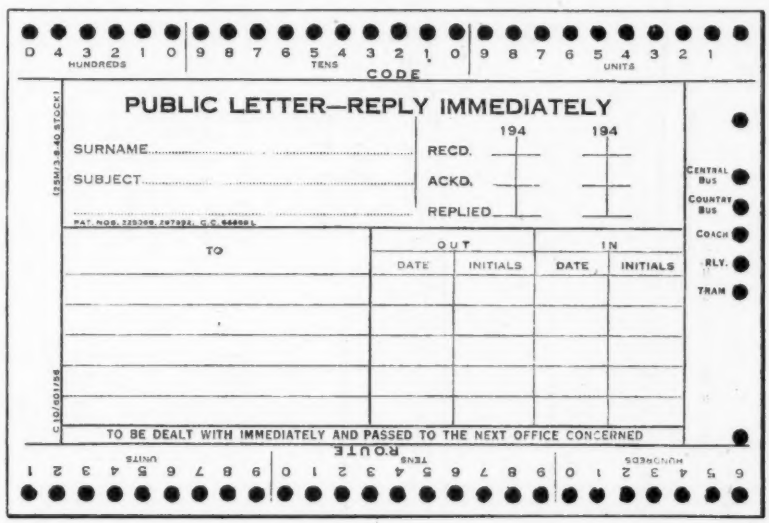
AN organisation which has as its object the service of the public cannot hope to succeed in this aim without some method of maintaining contact with those whose convenience, comfort, and safety it has to serve. The London Passenger Transport Board has established this contact through its Public Relations Office, which must play a dual role as mouthpiece of the public in its relations with the board, and of the board in its dealings with the public. As conditions vary, requests may be received for, perhaps, a new service to be operated here, or for an intermediate stop to be made there; and in wartime, when centres of population are being shifted and new factories and offices are coming into existence, and when, moreover, many of the latter are carrying on their work at all times of the day and night, there will be inevitably an increase in the demands for additional or alternative services. Moreover, some method of maintaining contact with the public is essential: the L.P.T.B. has a monopoly in the matter of public transport, apart from the fact that people can use cars or bicycles, or can choose to walk; and, moreover, that many people may prefer to spend their leisure hours at home, rather than to travel. Therefore the board cannot make use of that indicator of public opinion which would exist if rival means of public conveyance were available. So also will there be those who have suggestions to put forward, and those who have complaints to make, as well as the numerous seekers after information.

It is the Public Relations Office which receives all communications from the public, and the latter would be gratified, if not surprised, could it see something of the organisation which has been set up to enquire into every point which may be raised. Every letter which the Public Relations Office receives may, broadly, be classified under one of two heads: those which can be dealt with by the department itself, and those which require attention in other quarters. Each letter received is allotted a card in the filing system; this card has a series of holes which refer to the code in use. When, therefore, it is desired to refer to communications on a particular subject, those cards which have had the corresponding holes punched out will appear at once. At the same time, a copy of the card is made upon a paper duplicate, which is attached to the original communication, and this is sent to the chief Operating Officer of the department concerned in enquiring into the point raised. This system enables the Public Relations Office to follow up any letter which is in the hands of another department. The cards, one of which is illustrated, are of four colours; one colour is allotted to communications on the subject of central buses, another for country buses and coaches; the remaining two are for trains, and for trams and trolleybuses, respectively. All letters received by the Public Relations Office are replied to by that office and are not answered by other departments. The latter are required to investigate the points raised and to take such action as may be necessary from their own point of view, but it is the Public Relations Office which replies to the letters, and which must be satisfied by the information supplied by the departments. All communications therefore must be returned to the Public Relations Office, and it is to the credit of the system that 90 per cent. of all correspondence is answered within 7 days.

Contacts between the public and the board, however, are not all by means of correspondence in the first instance. Many people visit the Public Relations Office in order to submit their point of view personally. In these cases a card is prepared to the appropriate code number as though a letter had been received. When the matter raised has been investigated, a formal letter of reply will be sent by the Public Relations Office. The same procedure is followed in the cases of reports received through official channels, arising out of suggestions or complaints made by passengers to the board's inspectors and other officials.

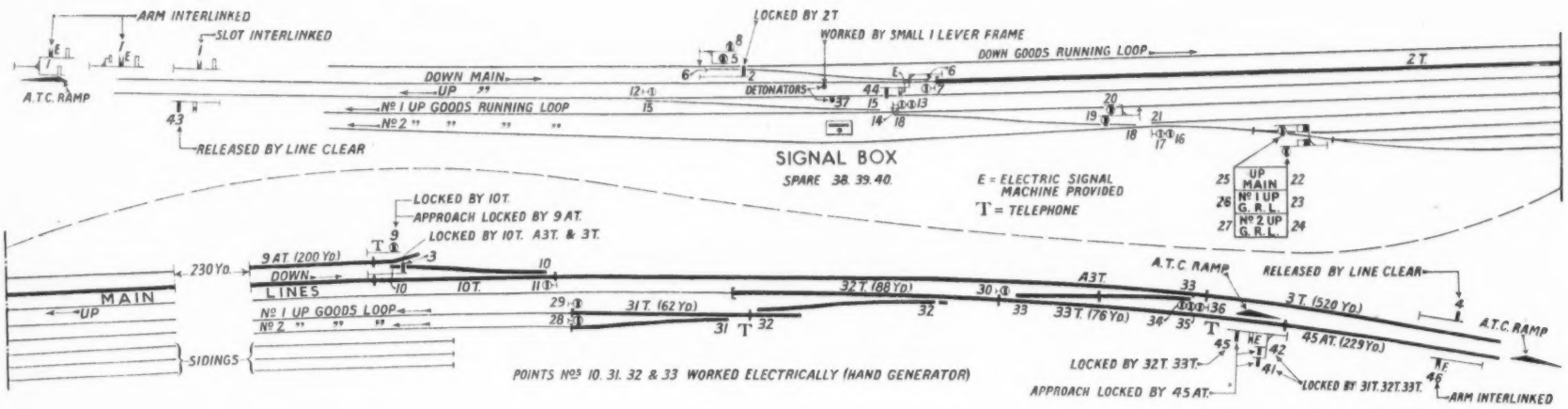
It has been said that communications may reach the Public Relations Office by means of correspondence, by personal contacts, or by reports from subordinate officials. It has been shown also that this office receives four main types of communications, namely, requests, suggestions, complaints, and enquiries. The last are easily dealt with, but in cases where the remainder touch upon basic questions of policy or practice they are passed to the principal officer concerned, and then to the Chairman of the board for final approval. Moreover, to provide other departments with the latest information on public relations, both daily and weekly statements of correspondence are prepared (in peacetime they are prepared monthly). These show at a glance the number of communications which (1) have been received and are outstanding; (2) have been sent for report and action; (3) have been answered; and (4) are outstanding for reply. These figures are subdivided to show the numbers applicable to each type of communication, and, further, to show how many refer to each type of transport (bus, train, and so on); and under the latter head they are finally sub-divided into the precise subjects on which communications have been received. A separate sheet is attached showing, again under a heading for each form of transport, details of suggestions and requests concerning the operation of services, and there are given also figures to show the numbers of communications and complaints dealt with at certain corresponding periods.

This system ensures that the humblest of citizens can talk to the board at will, so that the maximum is known about the public's needs. Every effort thus can be made to meet those needs, and to provide those facilities which will serve the requirements of the greatest number; and it is this which no doubt has played so large a part in the successful service of London's travellers by the London Passenger Transport Board.



The card, one of which is filed for every letter received from a member of the public; a duplicate is attached to each letter which passes to another department

WASTE PAPER AND OTHER SALVAGE.—Reports reaching the Waste Paper Recovery Association show that many offices and factories do not bother to keep waste paper separate from other salvage. In areas where sacks are provided for the collection of office and factory waste, sacks provided for waste paper only are being used as general dustbins. The result is that sacks supposed to be full of waste paper are arriving at the paper mills containing every possible type of salvage. Serious hold-ups at the paper mills result from this practice. In one mill near London visited by a representative of the Waste Paper Recovery Association recently, production has dropped by 15 per cent. in recent weeks because of damage to plant from foreign matter such as tins and bottles and the necessity for frequent clearing of clogged machinery. Besides the loss in production there is a serious loss of valuable salvage, including paper which cannot be separated from rags, string, etc., to which it has adhered in the process of being pulped. In one mill a recent delivery of waste paper weighing 30 tons produced, after sorting, one ton of tins alone, besides quantities of string and rubber



DETECTION					ELECTRICAL DETECTION SHEWN [ ]
No.	NORMAL	REVERSE	No.	NORMAL	REVERSE
9		10 [10]	29		32
11		10	30		33
12		15	34		31 32 33
13	18 *		35	31	32 33
14		18	36	32	33
16		21	41		31 [31] 32 [32]
17	21		42	31 [31]	32 [32]
19	15		45	32 [32]	
20		15	5		6
22		15 18	7		6
23	15	18	8	6	
24	18				
25		15 18			
26	15	18			
27	18				
28		32			

SUBSIDIARY LIGHTS	
RED	9 13 14 16 17 19 20 (22 23 24) (25 26 27) 28 29 30 5 7 8
WHITE	12 34 35 36 11

REPEATERS		
TYPE	FLAG	LEVER Nº's. Etc.
ARM	1	3 4 46 9
	2	(41 42 45)
LAMP		
	11	(3 4 41 42 45 46 9)
SPECIAL	1	1 DISTANT
	1	1 INTERMEDIATE DISTANT
	1	1 INNER DISTANT
	4	1 INNER DISTANT

Diagram of layout with running loops and hand-generator points typical of a number on the G.W.R.

SIGNALLING OF LOOPS ON THE G.W.R. WITH NEW TELEPHONE AND OTHER FACILITIES

(See article on opposite page and illustrations on page 62)

Signalling of Loops on the G.W.R. with New Telephone and other Facilities

Increasing traffic has necessitated the construction of a number of running loops, with long-distance point operation, additional track circuiting, and improved telephone facilities

A LARGE number of running loops and extensions to existing loops have already been brought into use on the Great Western Railway and others are in progress. In THE RAILWAY GAZETTE for March 20, 1942, at page 399, there appeared some particulars of the additional permanent way works carried out by the G.W.R. in connection with the numerous additional facilities necessitated by increasing war traffic requirements. These works have necessitated extensive signalling alterations and additions, which have been specially designed so that little, if any, increase in operating staff has been occasioned. By the use of track circuiting and long-distance point and signal operation the working has been concentrated in the minimum number of signal boxes. The various layouts, of course, differ from one another in certain small respects, but the same principles have been applied to them all and a uniform method of signalling and traffic working adopted throughout. We reproduce on the diagram on the opposite page a typical track and signal layout, from which the principal features of these installations will readily be understood.

SIGNALS AND POINTS

The signals are of the latest G.W.R. standard pattern, using lower quadrant arms and tubular steel posts or bracket structures, and are mechanically operated, except the distant signals which have battery signal machines. Detection is ordinarily mechanical, but electric detection by lever lock is added to it where signals govern movements over power-operated points. Point operation is also mechanical, except where the distance from the box renders this inadmissible, and then the hand generator system, of which the G.W.R. has already had a large number of installations in service for some time, is used. Considerable improvements have been made in the details of the hand-generator system since it was first introduced. In the present installations improved point machines, fitted with ball thrust bearings, are employed and rapid operation of the points is obtained without undue exertion being required to turn the generator. It is now the practice to snub these machines at the end of the stroke. Each machine has its own hand-crank for emergency operation, housed normally in an interlocked circuit controller, arranged to interrupt all control circuits and prevent any possibility of irregular working when operation is by hand.

The use of the hand generators has enabled the long-distance points to be worked efficiently and economically, without accumulators or other local source of power, and has saved a large number of signal boxes and attendant staff, which would have been hard to find in present circumstances; to use ground frames would have entailed certain unavoidable delays in working.

SIGNAL BOXES; TRACK AND POINT DETECTION CIRCUITS

In some cases new locking frames have been put in; in others the existing frames have been extended and re-locked. Electric track locking has been applied, as seen on the diagram, to ensure maximum safety with freedom of working, using d.c. track circuits, with separate feed sets to each, comprising two primary cells in parallel or a trickle charged accumulator. Point-detection circuits are each fed locally from primary batteries, with neutral normal and reverse relays. Line relays are d.c. The track, signal, and light repeater indicators are of the needle type in bakelite cases. Relay and apparatus housings, both in the signal box and out of doors, are of sheet steel, flameproof wired, with rubber insulated, asphalt covered, multi-core cables laid in the ground to connect to the actual apparatus. Standard methods of wiring and fitting have been used throughout the work. In a few cases hand-generator working has not been required and all signalling is mechanical.

The apparatus was supplied partly by the G.W.R. Signal Works and partly by the Westinghouse Brake & Signal Co. Ltd., London and Chippenham, which also assisted with the installation work.

CONTROL AND TRUNK TELEPHONE SCHEMES; WIRELESS

Many thousands of miles of wire have been run by the Signal Engineer's Departments, assisted to some extent by contractors' men, to establish some seven temporary control links and nine permanent trunk telephone links. A large amount of exchange equipment and other apparatus has been obtained from the various telephone manufacturers. Four fixed wireless stations, two mobile, and nine semi-mobile stations have been completed, and there are in service or being completed, sixteen loud speaker installations at important stations.

In addition a good deal of miscellaneous work has been done in connection with the removal of obstructions caused by line wires near aerodromes and the provision of protection where new public power-supply wires have been run across the railway, not to mention the heavy tasks thrown on the staff in repairing air raid damage.

We are indebted to Mr. F. H. D. Page, Signal Engineer, G.W.R., for the foregoing information.

Tubular-construction bracket signal reading over loop entrance points, showing G.W.R. standard lower quadrant semaphores

TYPICAL NEW RUNNING LOOPS ON THE GREAT WESTERN RAILWAY

(*See article on page* 61)

RAILWAY NEWS SECTION

PERSONAL

Engineer-Vice-Admiral Sir Harold Brown has been appointed to the new post of Senior Supply Officer, Ministry of Supply. Sir Harold Brown, who has served in the Ministry since 1939, was Director-General, and then Controller-General, of Munitions Production. He has been succeeded in the latter post by Mr. Graham Cunningham, who has been Director-General of Production Services in the Ministry since August, 1941, when he left the War Damage Commission.

The appointments are announced of four Chief Officers, under the Controller-General, Ministry of Fuel & Power, as follow :—

Mr. T. E. B. Young, a Director, and General Manager, Bolsover Colliery Co. Ltd., is to be Production Director.

Mr. J. Armstrong, Vice-President, National Union of Scottish Mineworkers, and General Secretary, West Lothian Mineworkers' Union, is to be Labour Director.

Mr. J. Innes, Deputy Controller-General, Mines Department, and formerly Director of Telecommunications, General Post Office, is to be Services Director.

Mr. D. W. Coates, Chief Accountant, Central Electricity Board, and latterly Honorary Financial Adviser to the Petroleum Department, is to be Finance Director.

L.M.S.R. Appointments

Mr. J. W. Cook, Assistant District Goods & Passenger Manager, Perth, to be District Goods & Passenger Manager, Aberdeen, *vice* Mr. H. Ross, deceased.

Captain J. J. Barker, Acting Marine Superintendent, Goole, to be Marine Superintendent, Goole.

Mr. T. Tinning, Stationmaster, Glasgow (Buchanan Street), to be Stationmaster, Glasgow (St. Enoch), *vice* Mr. J. Reid, retiring.

Mr. I. McCleary, Stationmaster & Goods Agent, Hamilton Central, to be Stationmaster, Glasgow (Buchanan Street).

Mr. J. Airth, Stationmaster & Goods Agent, Maryhill, to be Stationmaster & Goods Agent, Hamilton Central.

Mr. J. MacRae, Stationmaster & Goods Agent, Larbert, to be Stationmaster, Inverness, *vice* Mr. J. Donaldson, retiring.

Mr. T. Bond, Stationmaster, Barking (also in charge of Upney), to be Stationmaster & Goods Agent, St. Albans City (also in charge of St. Albans Abbey, and St. Albans, L.N.E.R.), *vice* Mr. G. E. Howlett, retired.

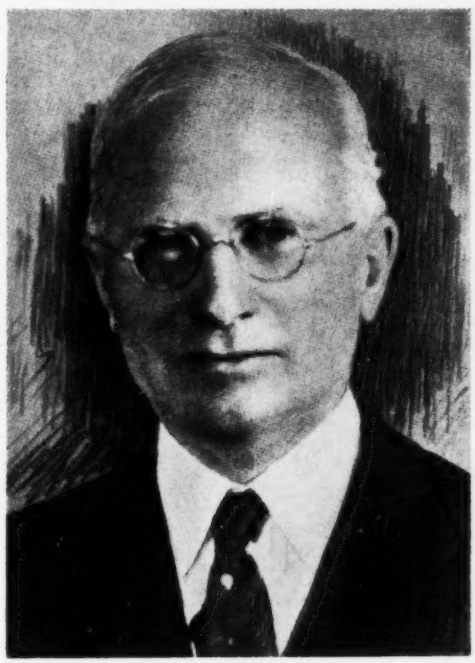
Mr. A. Johnson, Stationmaster, Kettering, to be Stationmaster, Barking (also in charge of Upney).

Mr. H. F. Vercoe, Assistant District Controller, Westhouses, to be Stationmaster & Goods Agent, Market Harborough, *vice* Mr. W. F. Gee, retired.

Mr. F. H. Middleton, Chief Clerk, Somers Town, to be Goods Agent, Bow & Old Ford, *vice* Mr. H. L. Phillp, retired.

Mr. G. H. Banner, District Foreman (Carriage & Wagon Department), Llandudno, to be District Foreman (Carriage & Wagon Department), Manchester (Victoria) & Ordsall Lane.

Mr. Daniel Willard, Chairman, and, until last year, President, of the Baltimore & Ohio Railroad, and Chairman of the Reading Company, whose death was recorded in our July 10 issue, was born in 1861. He commenced his railway career as a platelayer on the Central Vermont, and, during the next 30 years, was employed on the former Connecticut & Passumpsic River; Lake Shore & Michigan Southern; Soo; Erie; and Chicago, Burlington & Quincy Railways; and finally on the Baltimore & Ohio Railroad. He became President of the latter system in 1910, and, when he was re-elected President on November 27, 1940, it was for his thirty-first term in succession. In 1916 he was appointed by President Wilson to be a member of the Advisory Commission of the Council of National Defence, and shortly afterwards he was elected Chairman, in which capacity he served for the remainder of the war; he became also, in 1917, Chairman of the War Industries Board. In 1920 he was appointed Chairman of the Advisory Committee of the Association of Railway Executives, and in 1921 he was made Chairman of the Board of Directors of the American Railway Association. Mr. Willard's activities included, up to the time of his death, Chairmanship and Presidency of the Alton Railroad, a subsidiary of the B. & O. RR.; membership of the Board of Directors, and of the Executive Committee, of the Association of American Railroads; and Trusteeship of Johns Hopkins University, of the Board of Trustees of which he also had been Chairman. In June, 1941, he was awarded by that university the honorary degree of Doctor of Laws; he had received also honorary degrees of ten other colleges. He held the rank of Commandant Colonel of Engineers in the United States Army, and was Honorary Adviser to the Army Industrial College. Mr. Willard arranged for the Coronation Scot to be stored at Baltimore after the closing of the New York World's Fair in 1940, as it was not considered practicable to ship the train back to England under the existing conditions.



The late Mr. Daniel Willard
President of the Baltimore & Ohio Railroad, 1910–41

The following appointments were made recently to Canadian Pacific Air Lines Limited, the activities of which form the subject of an article at page 56 :—

Mr. L. B. Unwin, President.

Mr. W. M. Neal, Vice-President.

Mr. C. H. Dickins, D.F.C., O.B.E., Vice-President & General Manager, with headquarters at Windsor Station, Montreal. Mr. Dickins is in charge of all the operations of the company.

Mr. G. W. G. McConachie (President of Yukon Southern Air Transport Limited, of Edmonton), General Manager, Western lines, with headquarters at Winnipeg. Mr. McConachie is to be responsible for all commercial operations of the Canadian Pacific Air Lines west of Fort William and Lake Nipigon.

Mr. C. R. Troup, former General Manager of Dominion Skyways (Observers) Limited, and for some time General Supervisor of the flying schools and aircraft repair shops, is General Supervisor of Schools, with headquarters at Windsor Station, Montreal. He is responsible for the operation and conduct of all the schools of the British Commonwealth Air Training Plan being managed by subsidiaries of the company.

Mr. T. W. Siers, General Supervisor of repair plants, with headquarters at Montreal.

Mr. W. R. Patterson, Assistant Comptroller, Canadian Pacific Railway, becomes Comptroller of Canadian Pacific Air Lines Limited.

Mr. T. H. Moffitt, Assistant Treasurer, Canadian Pacific Railway Company, has been appointed Treasurer, Canadian Pacific Air Lines Limited.

Mr. I. R. G. Collins, Secretary.

Mr. J. E. T. Stanbra, Secretary of the Railway Clearing House, has been elected a member of the Institute of Transport.

Mr. G. F. Drummond, who has been appointed Assistant Chief Architect, Canadian National Railways, Montreal, was born in 1891. He received his architectural training at the Royal Technical College, and at the Glasgow School of Art, after which he went to Canada. He served overseas with the Canadian Field Artillery during the war of 1914-19, and then returned to his former position. Shortly afterwards he became Chief Designer, and was responsible for the design of many important buildings in Canada. Mr. Drummond joined the Architectural Department of the Canadian

National Railways in 1927, and was promoted to be Assistant Architect in 1929; he held this position until his present appointment. He is a member of the Quebec Association of Architects, and of the Royal Architectural Institute of Canada

Mr. J. F. M. Taylor, Assistant Divisional Superintendent, Worcester, G.W.R., who, as recorded in our July 3 issue, has been appointed Divisional Superintendent there, entered the company's service in 1924, when he was attached to the General Manager's Office. His services were loaned to the Chinese Government in April, 1935, so that he might act as Secretary to a Commission, under the chairmanship of Brigadier-General F. D. Hammond, to report on the Chinese railways. In October of the same year he was transferred to the office of the Superintendent of the Line as a train runner. In 1937 he acted as Secretary to the Hammond Commission, appointed by the Government to report on the Ceylon railways; and in 1938 he was appointed Junior Assistant to the District Traffic Manager, Plymouth. In September, 1939, Mr. Taylor was loaned to the Railway Executive Committee, and later was appointed an Assistant Secretary. He vacated that post in February of last year and became Chief Clerk to the Divisional Superintendent, Worcester, where he became, in December, Assistant Divisional Superintendent.

Mr. J. F. M. Taylor

Appointed Divisional Superintendent, Worcester, G.W.R.

Professor C. L. Fortescue, O.B.E., M.Inst.C.E., M.I.E.E., has been elected President of the Institution of Electrical Engineers for the year beginning September 30.

Mr. D. A. Bremner has informed the Council of the British Engineers' Association of his desire for early retirement from the Directorship. He has held the position for twenty-four years. He will continue to serve the council in an advisory capacity.

Major L. H. Peter, M.C., A.F.C., M.I.E.E., formerly Chief Electrical Engineer, Westinghouse Brake & Signal Co. Ltd., has been appointed Chief Engineer of the company, as from July 1, 1942.

Mr. W. H. Powell, a Director, and General Manager, of the Westinghouse Brake & Signal Co. Ltd., whose retirement from the latter position, as from July 1, is announced, is a son of the late Mr. W. Powell, formerly Signal Superintendent of the Taff Vale Railway, with which his son received his early training in the locomotive works; afterwards he spent three years in the engineering school of the Welsh University, and, on leaving, he joined his father's staff in the Signal Department, Taff Vale Railway, which included many others whose names subsequently became notable in the signalling profession. Amongst the latter were Mr. F. H. D. Page, Signal Engineer, G.W.R., Mr. W. H. Liley, late Deputy Chief Signal & Interlocking Engineer, G.I.P.R., and Mr. H. E. Morgan, Divisional Signal & Telegraph Engineer, L.M.S.R., Crewe. Later, Mr. Powell joined McKenzie & Holland Limited, as Resident Representative for Wales and Ireland; subsequently he was transferred to Darlington as Representative for Northern England and Scotland. In 1916, on the retirement of Mr. S. P. Wood, Managing Director of McKenzie & Holland Limited, and, on the appointment of Mr. H. G. Brown to that position, Mr. Powell went to London as Manager, and, a year later, was appointed Works Manager of the Vulcan Iron Works, Worcester. In 1919 he went to Chippenham as Manager of Saxby & Farmer Limited; in 1920, on the formation of the Westinghouse Brake & Saxby Signal Co. Ltd., when it was decided to close the works at Worcester and to concentrate the manufacture of the signalling apparatus at Chippenham, Mr. Powell became Manager there. He was transferred to London in 1922, when he was appointed General Manager, which position he held until his retirement. He was elected a Director of the company in 1935. Mr. Powell will continue to serve on the board of the Westinghouse Brake & Signal Co. Ltd., and also on the boards of several other companies of which he is a Director. He is a member both of the Institution of Mechanical Engineers and Institution of Railway Signal Engineers. He has travelled widely in the interests of the company, and frequently visited the Continent and the United States. In 1928 he went to Cuba, and, in the same year, made an extended tour of South America, visiting Argentina, Bolivia, Brazil, Chile, Peru, and Uruguay.

Mr. W. H. Powell

General Manager, Westinghouse Brake & Signal Co. Ltd., 1922-42

Mr. W. J. England, Assistant Superintendent of Operation, Southern Railway, who, as recorded in our July 3 issue, has been appointed Superintendent of Operation, was born at Instow, North Devon; he received his early training on the former London & South Western Railway. After obtaining station experience at Chard Junction, Bentley, Farnham, and Farnborough, he was transferred to the office of the Superintendent of the Line. In 1912 he was appointed Assistant Divisional Superintendent, Exeter, and later he acted, for a short time, as Traffic Superintendent of the Somerset & Dorset Joint Railway. On the formation of the Southern Railway, he became General Assistant to the Chief Operating Superintendent; in 1930 he was made Trains Assistant to the Superintendent of Operation; and in 1933 he was appointed Assistant Superintendent of Operation. Mr. England is a member of the Institute of Transport.

Mr. W. J. England

Appointed Superintendent of Operation, Southern Railway

We regret to record the death on July 10, at the age of 81, of Mr. George Christopher Lloyd, who was Secretary of the Iron & Steel Institute from 1908-1934.

Mr. George West Byng has resigned his position as an Assistant General Manager, Barclays Bank Limited, as from the end of July, and is joining the board of Dorman, Long & Co. Ltd. as a full-time Executive Director.

Mr. W. H. White has been elected to the Board of the Peruvian Corporation Limited.

Mr. M. G. Tweedie, who has been Honorary Secretary of the Institution of Railway Signal Engineers since February 23, 1921, has resigned because of ill-health. Mr. Tweedie retired from the Signal Department of the Great Western Railway in September, 1939. The Council

of the Institution has accepted the offer of Mr. L. F. Baker, who is in the same department and has rendered much assistance to Mr. Tweedie during his term of office, to serve as Honorary Secretary, and he has now taken over the work.

Mr. John Williams has retired from the position of Chief Accountant, South African Railways & Harbours. A portrait of Mr. Williams, with a biographical note, were given in our March 20 issue.

Lt.-Colonel N. N. Ellis, M.B.E., Expenditure Accountant, South African Railways & Harbours, has been appointed Chief Accountant, in succession to Mr. John Williams, who has retired. Lt.-Colonel Ellis was born in 1884, and is the son of the late Major O. H. Ellis, who had been Chief Accountant to various railway administrations. He entered railway service in 1902, as a clerk in the Engineering Department at Kroonstad. He was promoted to Acting District Clerk in 1907; and subsequently he served as Accounts Clerk during the railway construction between Standerton and Vrede, and between Bethlehem and Reitz. In 1910 he was transferred to the Assistant General Manager's Expenditure Office, Johannesburg, in which he reached the position of Senior Clerk before he went to the Chief Accountant's Department in 1928, where, four years later, he became Principal Clerk. He went to Kimberley in 1934 as Local Accountant, and later served at Pretoria, and at Johannesburg, in the same capacity. He held the position of Revenue Accountant, S.A.R. & H., Johannesburg, before being appointed Expenditure Accountant. Lt.-Colonel Ellis received the M.B.E. for his services during the war of 1914-19, in which he served overseas as Paymaster to the South African Forces. In the present war, after serving on the Leverton Commission, in connection with the reorganisation of the Army Pay Department, he was seconded to supervise the carrying out of the commission's recommendations. He is engaged still upon military duties, and Mr. C. W. Edgar, Expenditure Accountant, S.A.R. & H. is acting for him.

Mr. W. H. Morton, M.I.Mech.E., who retired recently from the position of General Manager, Great Southern Railways, Eire, was presented, on May 28, with a portrait, painted by Mr. Leo Whelan, R.H.A. The presentation, which has been recorded previously in our June 5 issue, was made by Mr. W. G. Bradley, Law Agent, Great Southern Railways. The function took place in the board room at Kingsbridge Station, Dublin.

Photo of painting by Mr. Leo. Whelan, R.H.A., of Mr. W. H. Morton, presented to him on his retirement from the position of General Manager, Great Southern Railways, Eire

Mr. J. C. Patteson's Broadcast to Canada

Mr. J. C. Patteson, European Manager to the Canadian Pacific Railway, who is Director-General, Supply Services, at the Ministry of Supply, in a recent broadcast said that he was one of the few Canadians in the service of the Government of the United Kingdom, and that his work connected him with both Canada and the United States each business day. He described himself as an honorary temporary civil servant—honorary, because his company, the Canadian Pacific Railway, paid his salary—temporary, because he could be dismissed at any moment—civil servant, because he worked for the Ministry of Supply.

"My title, Director-General, Supply Services, really means I do the odd jobs," he said in the course of his broadcast. "I am not production; I am not statistical or planning. I have nothing to do with administration or finance or research, but I do look after transportation, storage, vehicles, and gasolene, supplied to Allied and friendly countries, as well as the programming and distribution of components, propellants, and explosives. In addition, my Department handles transportation for the Ministry of Works and Buildings, the Ministry of Agriculture, the Department of Agriculture for Scotland, and the Ministry of Commerce in Northern Ireland.

Transport Problems

"It was in October, 1940, that Sir Andrew Duncan, who had just been appointed Minister of Supply, asked me to come and handle transport and storage. There were many difficulties. An organisation had to be collected; it was imperative that badly congested ports should be cleared, and cleared quickly, of accumulated goods; and winter was approaching, with all the inconvenience of black-out and short daylight hours.

"The need was advance planning. In the case of raw materials and manufactured goods imported into this country, it was essential to know not only what was coming as soon as the ship had sailed from your side, but to find out from the Raw Material Controls and Production Departments where they wanted their goods sent upon arrival. We could not wait until the goods arrived. This, in many cases decides the port, and permits us to use the most suitable inland transport, always in consultation with those concerned at the port and those who handle the actual traffic.

"I have never made any attempt to control every wheel that turns by building up a large organisation, but rather to use the normal commercial services wherever that was possible. Our internal traffic represents 60 per cent. of the general merchandise conveyed by the railways, and provides an important volume by road, canal and coasting vessel. In a nutshell, we are the servants of Production Departments.

"Transport of workers was another problem. It is one of the more interesting jobs, because it involves the human element, and one feels repaid if the daily journey can be shortened or made more comfortable. The numbers are large—over a quarter of a million each day, by bus and train, with an internal factory bus service catering for 100,000 for whom large trailer buses were designed. At some of the largest factories there are as many as 58 special trains a day and 550 bus services, though we use rail wherever possible.

"At the outset there were few facilities; just a cinder platform, without shelter or lights. Today there are special branch railway lines, modern stations with several platforms at some factories as many as four private stations; bus parks at every factory; placed conveniently. There must be plenty of entrances and exits. There must be splinter-proof roofs; there must be loud-speakers, traffic inspectors, special light indicators for use in black-out, and for all this the worker does not pay more than 12 cents a day."

Mr. J. C. Patteson
European Manager, C.P.R., who is Director-General, Supply Services, Ministry of Supply

TRANSPORT SERVICES AND THE WAR—148

Control of Food Transport

The sector scheme of the Ministry of Food to effect economies in the wholesale distribution of groceries and provisions will come into force on August 24. For the purposes of the scheme the country has been divided into nine sectors, as follow :—

Sector 1—London, South Eastern, Southern, Eastern I, Eastern II
Sector 2—South Western
Sector 3—South Wales
Sector 4—Midland
Sector 5—North Midland
Sector 6—North Western, North Wales, North Eastern
Sector 7—Northern
Sector 8—All Scottish divisions
Sector 9—Northern Ireland

Wholesale traders may sell only to retailers in the same sector, but, notwithstanding the sector boundaries, a wholesaler may deliver to any customer whose premises are within a radius of 40 miles from those of the seller.

Various industries are organising their own transport pools to meet the requirements of the Ministry of Food. For example, the Biscuit Delivery Pool Limited was incorporated towards the end of June as a company limited by guarantee without share capital, to plan and operate any scheme for pooling and co-ordinating transport and distribution in the biscuit and associated industries, and to carry out any duties assigned to the company by the Government.

The Reduced Restaurant Car Services

The accompanying table gives a complete list of the trains in Great Britain that are still provided with restaurant car facilities, numbering 62 daily. There are 28 on the L.M.S.R. (18 Western Division, 2 Midland Division, and 8 Northern Division) ; 16 on the G.W.R. ; 12 on the L.N.E.R. (4 on the G.N. Section, 2 on the G.E. Section, and 6 in the Scottish Area) ; and 6 on the Western Division of the S.R. For working these services 40 sets of cars are required, 17 on the L.M.S.R., 13 on the G.W.R. 6 on the L.N.E.R., and 4 on the S.R.

More 20-standing Single-Deck Buses

London Transport is now arranging for a further 110 single-deck buses to be converted so as to accommodate 20 standing passengers ; 37 of these buses will operate in the Central (red) Area and 73 in the Country (green) Area. Already 176 single-deck London buses, chiefly in country areas, have been converted.

Irish Train Service Changes

Important alterations to passenger train services were brought into operation in Ireland during June, to some of which we made brief reference at page 683 of our June 19 issue. From June 1 the Great Northern Railway withdrew two out of the five daily express trains operating between Dublin and Belfast. These are the 6 a.m. and 11.10 a.m. from Dublin to Belfast and the 3 p.m. and 7.10 p.m. from Belfast to Dublin ; a train still leaves Warrenpoint at 8.35 a.m. for Goraghwood, Portadown, Lurgan, and Belfast to maintain the service given formerly by the 6 a.m. from Dublin. The 10.15 a.m. from Belfast to Dublin leaves at 11.15 a.m. Other withdrawn trains include the 7.40 and 10.15 a.m., 6.20 and 8.20 p.m. from Dublin to Drogheda, 10.45 a.m., 3.5 and 9.30 p.m. from Drogheda to Dublin, various suburban services between Dublin, Howth, and Malahide, and on most of the G.N.R. branches in Eire, trains have been taken off, including the advertised special summer service between Bundoran Junction and Bundoran.

On the Great Southern Railways some amelioration of the travel conditions between Dublin and Cork was effected from June 29 by starting the 9 a.m. from Kingsbridge (the only down train, which hitherto has called at all stations), at 9.45 a.m., and making the first stop Ballybrophy (66¾ miles) ; the booked arrival time at Cork is still 4 p.m. The Limerick and Waterford train leaves independently at 8.15 a.m., and does the roadside work from Hazlehatch to Ballybrophy inclusive, with connections for Carlow, Kilkenny, Athlone, Banagher, and Birr. In the reverse direction the 11.45 a.m. from Cork (previously 11.15 a.m.) is non-stop from Ballybrophy to Dublin, due 6.20 p.m., and a train from Limerick at 3 p.m., due Kingsbridge 8 p.m., does the roadside work north of Ballybrophy. Similarly on the Midland Great Western main line of the G.S.R., the 10 a.m. from Dublin (Westland Row) is now non-stop to Mullingar, and is due in Galway at 3.5 p.m., while there is a 9.10 a.m. from Westland Row for the intermediate work to Mullingar, continuing to Sligo, where it is due at 2.40 p.m. In the reverse direction the 11.40 a.m. from Sligo, due Westland Row at 5.35 p.m., relieves the 11 a.m. from Galway, which starts at 11.15 a.m., is non-stop from Mullingar, and reaches Westland Row at 4.20 p.m. Arising out of these alterations, extensive changes are made in the times of connectional branch trains all over the Great Southern system.

DAILY RESTAURANT CAR SERVICES ON BRITISH RAILWAYS, SUMMER, 1942

Railway	Area or Division	Trains	From	To
L.M.S.R.	Western	8.30 a.m., 10.35 a.m., 5.30 p.m.	Euston	Liverpool
,,	,,	10.15 a.m., 5.30 p.m.	,,	Manchester
,,	,,	8.15 a.m.	,,	Holyhead
,,	,,	3 p.m.	,,	Heysham
,,	,,	4.5 p.m.	,,	Blackpool
,,	,,	4.50 p.m. (to Crewe only)	,,	Stranraer
,,	,,	8.15 a.m., 10 a.m., 5.25 p.m.	Liverpool	Euston
,,	,,	9.45 a.m., 5.30 p.m.	Manchester	,,
,,	,,	1.45 p.m.	Holyhead	,,
,,	,,	9.35 a.m.	Heysham	,,
,,	,,	7.55 a.m.	Blackpool	,,
,,	,,	11.25 a.m. (to Willesden only)	Crewe	,,
,,	Midland	5.30 p.m. (to Derby only)	St. Pancras	Manchester
,,	,,	9.30 a.m. (from Derby only)	Sheffield	St. Pancras
,,	Northern	10 a.m., 5 p.m.	Glasgow	Aberdeen
,,	,,	10.10 a.m., 5.30 p.m.	Aberdeen	Glasgow
,,	,,	6.40 a.m. (to Aviemore only)	Perth	Inverness
,,	,,	11 a.m. (from Aviemore only)	Inverness	Perth
,,	,,	11.55 a.m. (to Helmsdale only)	,,	Wick
,,	,,	3.25 p.m. (from Helmsdale only)	Wick	Inverness
L.N.E.R.	Southern	9.30 a.m., 5.50 p.m.	King's Cross	Leeds
,,	,,	7.50 a.m., 5.30 p.m.	Leeds	King's Cross
,,	,,	5.49 p.m. (*via* Cambridge)	Liverpool St.	Norwich
,,	,,	10.20 a.m. (*via* Ipswich)	Norwich	Liverpool St.
,,	Scottish	9.55 a.m., 7.10 p.m.	Edinburgh	Aberdeen
,,	,,	6 a.m., 6.5 p.m.	Aberdeen	Edinburgh
,,	,,	5.55 a.m.	Glasgow	Fort William
,,	,,	2.50 p.m.	Fort William	Glasgow
G.W.R.	—	10.30 a.m., 1.30 p.m.	Paddington	Penzance
,,	—	10.40 a.m.	,,	Kingswear
,,	—	11.5 a.m.	,,	Birkenhead
,,	—	11.55 a.m. (to Swansea only)	,,	Neyland
,,	—	4.15 p.m.	,,	Plymouth
,,	—	5.55 p.m. (to Cardiff only)	,,	Swansea
,,	—	6.30 p.m. (to Bristol only)	,,	Plymouth
,,	—	8 a.m., 9.30 a.m., 11 a.m.	Penzance	Paddington
,,	—	11.40 a.m.	Birkenhead	,,
,,	—	8.15 a.m. (from Swansea only)	Neyland	,,
,,	—	8.30 a.m.	Plymouth	,,
,,	—	8.15 a.m.	Cardiff	,,
,,	—	12 noon	Bristol	,,
S.R.	Western	9 a.m., 10.50 a.m., 5 p.m.	Waterloo	Exeter
,,	,,	7.30 a.m., 12.50 p.m., 5.53 p.m.	Exeter	Waterloo

TO OUR PASSENGERS

COAL ECONOMY

The urgent need to save coal makes it necessary to further reduce the lighting of stations and trains

If your station or train is not so bright, remember the reduction in lighting means at least 160 tons of coal saved per week

London Transport poster concerning its latest fuel economy step

Restaurant Cars in Ireland

All the restaurant cars on the Great Southern Railways have been withdrawn, but the Great Northern Railway continues restaurant car and buffet service in each direction between Dublin and Belfast and four refreshment car trains each way between Belfast and Londonderry. The Northern Counties Committee has four refreshment car trains in each direction daily between Belfast and Londonderry or Portrush.

Motor Restrictions in Holland

Restrictions on the use of motor vehicles in Holland have been further tightened. Every car driver under permit must carry a log book and enter particulars of every trip made ; the permit must now be exhibited clearly on the windscreen. Taxis and hired cars may be used, on Saturdays and Sundays, only for the sick and for trips to and from railway stations where no public transport services are available. Taxis and

hired cars may not be used for trips of more than 25 km. (15 miles) unless a special permit is procured, which will be supplied only if the journey is on unavoidable business, clear proof of which must be given.

Special Compartments for German War Cripples

In all German trains there is to be a special compartment for soldiers who have been crippled on active service or while on garrison duty, and persons crippled in the National Socialist Party's fight for power. Instructions have been issued that these persons should be given first attention at ticket barriers and luggage offices, according to the *Frankfurter Zeitung* of June 1.

Slovak Road Scheme

The Slovak Ministry for Communications & Public Works has prepared a comprehensive scheme for road development during the period 1942-1949. Some 830 miles of dust-proof roads are to be built. The present Slovak system of dust-proof roads has a total length of approximately 620 miles. A long-distance high-speed road is said to be under construction at present, but no indication as to its whereabouts is given. Its length is stated to be 280 miles, and its breadth 93½ ft.

New Railway Works in Roumania

The Buzeu-Braila-Galatz main line is to be double-tracked, and work is stated to have begun already on the section from Buzeu to N. Filipescu, 25 miles. During 1941 work was taken in hand in connection with doubling the track on the 57-mile Buzeu-Marasesti section of the Bucharest-Cernauti main line. Reference to the map on page 224 of our issue of February 13 last shows the relationship of these sections to existing double-track lines.

Construction of a link between Sihlea and Traian Sat was begun during 1941 to form a shorter connection between the Bucharest-Cernauti main line and the Danube port of Braila. Sihlea is 176 km. to the north-east of Bucharest, and 15 km. to the north of Ramnicul Sarat. Traian Sat is on the Buzeu-Braila line 22 km. west of Braila.

Harsova, the Danube port on the right bank of the river about midway between Braila and Czernavoda, is to be linked with the railway system. The new line, which was under construction during 1941, branches off at Tandarei. A goods line avoiding the Ploeshti stations was built recently, and has now been placed in service, between Brazi, the first station south of Ploeshti on the Bucharest line, and Teleajan, the first station north-east of Ploeshti on the Buzeu line. It is 11¼ km. (7¼ miles) in length, and runs to the east of Ploeshti crossing the Slobozia line at a new junction called Dambu, 2½ miles from Ploeshti South Station, 5½ miles from Brazi, and 1¾ miles from Teleajan.

Petrol Rationing in South Africa

There seems to be little doubt that the introduction of petrol rationing in South Africa is having the expected effect of diverting a substantial proportion of regular short-distance passenger traffic from road to rail transport. This is illustrated by the sharp upward trend in the total of season tickets issued in the principal suburban areas of the Union during the early months of this year, as shown in the following table :—

Suburban area	Number of season tickets issued			
	March, 1941	January, 1942	February, 1942	March, 1942
Cape Town	108,440	111,851	117,799	132,459
Rand and Pretoria	75,341	80,467	82,201	94,010
Durban and Pietermaritzburg ...	27,826	27,782	28,605	34,262
Port Elizabeth	10,319	10,652	11,611	13,794
Total	221,926	230,752	240,216	274,525

Petrol rationing in South Africa was brought into effect on February 1 last (see page 139 of our January 23 issue). It is on the basis of permitting 400 miles of travel monthly for private motorcars.

New York Buses for U.S. Navy

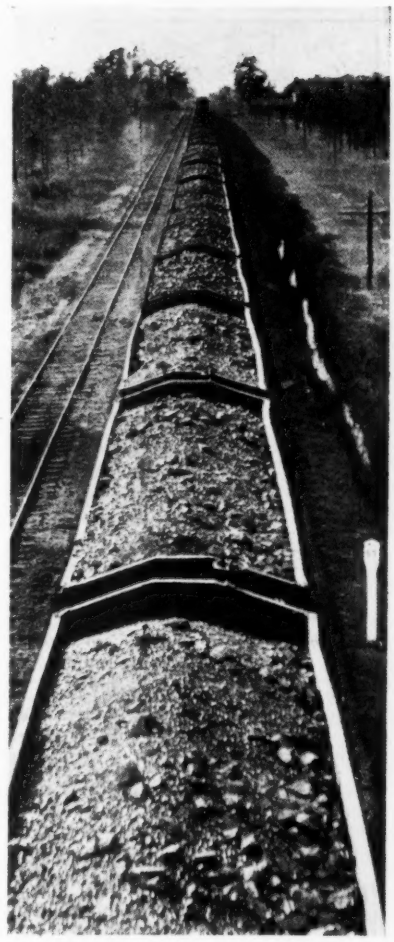
The Third Avenue Railway, an important tramway undertaking in New York, had intended to replace its tramcars on 59th Street, 10th Avenue, and other routes, by means of motorbuses. In view of the entry of the United States into the war and of events in the Far East which have made it of urgent necessity to economise in the use of rubber, this conversion scheme has been deferred, and many of the Third Avenue buses have been taken over by the U.S. Navy Department. On April 1, 87 of the vehicles passed into the service of the Navy and were placed in use for the transport of workers at Naval Depots in various parts of the country. The company had actually secured 107 vehicles but is retaining 20 for emergency use. There are 193 on order which were intended to complete the tram substitution programme ; the U.S. Navy proposes to acquire these also.

American War Freights

The railways of the U.S.A. are being called upon to handle unprecedented loads in view of war conditions, and some striking pictorial indications of this are given by many photographs which have been released officially in America. One of these, which we reproduce herewith, shows the heaviest freight train ever handled by the Charleston & Western Carolina Railroad, amounting to 7,822 (short) tons. It consisted of 102 loaded cars, 65 of which carried coal from the Clinchfield mines. The C. & W.C. RR. is entirely single track, and the train in our illustration is, of course, on this running track. The line at the left is a passing loop. The milepost indicates the distance (87 miles) to Augusta, Georgia. The C. & W.C. RR. ,although a small undertaking, paid dividends throughout the depression years. It has a route length of 343 miles, and its rolling stock comprises 40 steam locomotives, 22 passenger carriages, 815 goods wagons, and 92 miscellaneous vehicles. The locomotives include a 2-10-2 built for the Russians during the war of 1914-19, and afterwards converted from the 5 ft. to the standard gauge of 4 ft. 8½ in. This railway is a subsidiary of the Atlantic Coast Line Railroad, but is independently operated.

Long-distance Bus Service Reductions in the U.S.A.

In its efforts to place bus services on what is considered as a war footing, the Office of Defense Transportation has ordered four long-distance services operating between New York and Washington to pool their resources and schedules, and to eliminate duplicate journeys. The Order, which became effective on June 3, is based on a voluntary plan submitted by the companies concerned at the request of the O.D.T. The companies involved are Pennsylvania Greyhound Lines (an associate of the Pennsylvania Railroad) ; Safeway Trails Inc. ; Eastern Trails Inc. ; and the Quaker City Bus Company. Under the Order they will : (*a*) honour one another's tickets between all points where fares are the same ; (*b*) eliminate duplications in schedules, excepting between Washington and Baltimore where it is contended that peak loads make such duplications necessary ; (*c*) discontinue one-day excursions between New York and Philadelphia ; and (*d*) discontinue certain weekend excursion fares. Although not specified in the Order, it is understood that the companies are eliminating all express schedules and are slowing ordinary schedules. The buses make an average of 28 stops between New York and Washington, as compared with 6 or 7 by train, and thus offer facilities for semi-local passengers.



An American War Effort— The heaviest freight train ever handled by the Charleston & Western Carolina Railroad

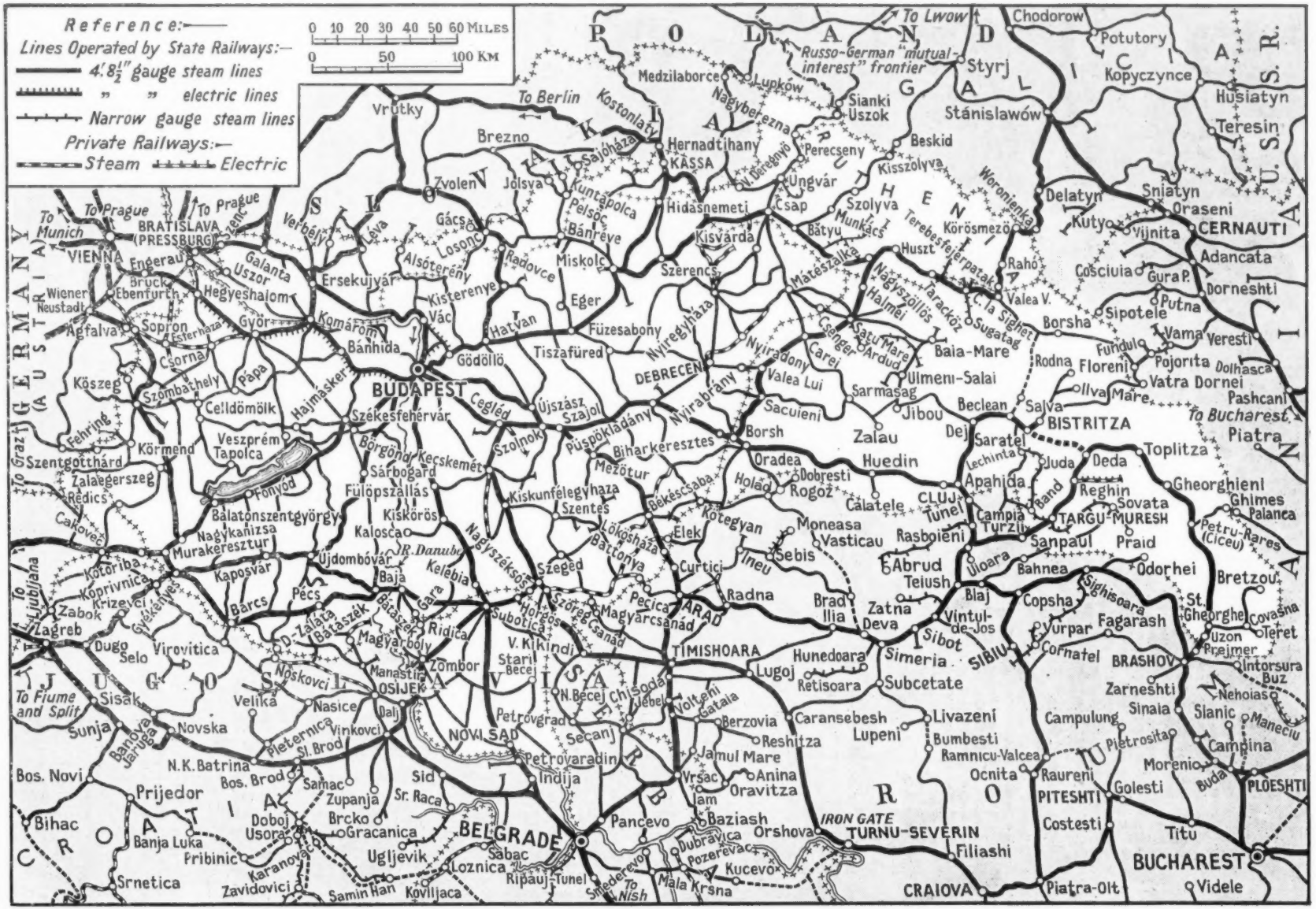
(*See accompanying paragraph*)

U.S.A. Railway Freight Priorities

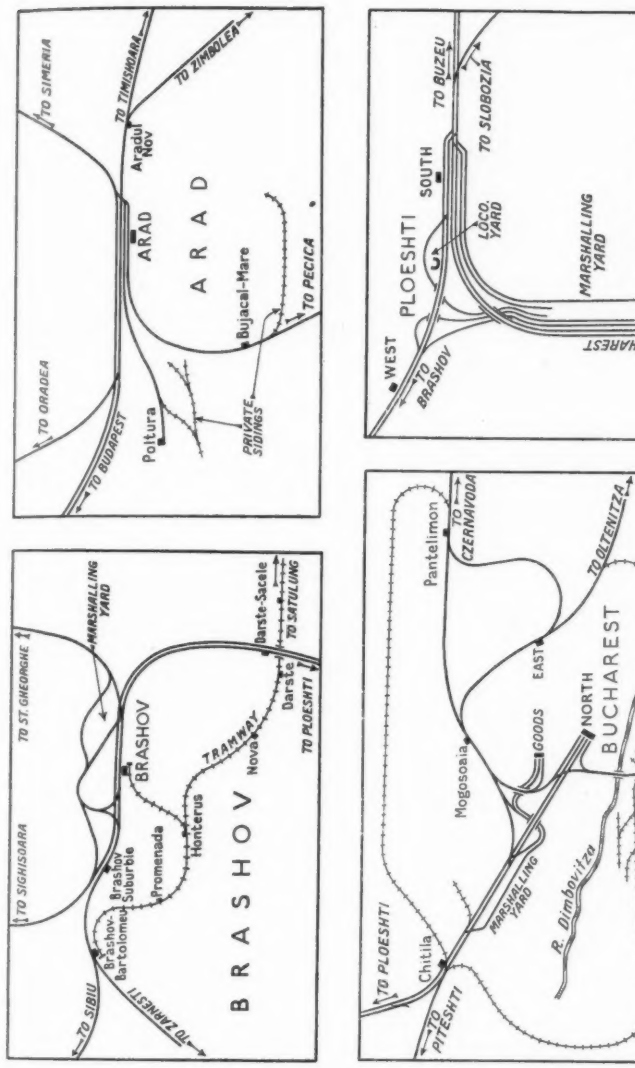
The U.S.A. railways exercise a complete embargo on civilian freight moving to ports for export, except on permits showing the ship space is available, as we recorded at page 42 of our July 10 issue. Restrictions are now to be imposed in a similar way on the movement of Government freight, except that the movements will take place on the basis of priorities fixed by a joint committee recently appointed, and which will work in co-operation with the War Shipping Administration and the principal railway companies.

Private Motoring in Brazil

Because of fuel shortage, the use of private motorcars has been forbidden throughout Brazil from July 15.



The railways of Hungary as enlarged by the boundary changes of 1938-1941



Sketch plans of the railway lines in the neighbourhoods of five important towns shown on the map on the opposite page

The railways of Hungary as enlarged by the boundary changes of 1938-1941

The Enlarged Hungary and its Railways

Various frontier changes in Europe during the past four years as a result of Axis aggression have usually resulted in substantial reductions in the territorial limits and railway mileages of small States, and we have recently described the dismemberment of Jugoslavia and the drastic reductions of Poland and Roumania. The outstanding example of substantial "gains" is provided by Hungary, which now has a railway mileage some 60 per cent. greater than in 1938. The following table shows the approximate increases with successive acquisitions:—

	k/m.	(miles)
Hungarian State Railways in Autumn, 1938	7,856	(4,879)
Sections taken over from the Czechoslovak and Slovak systems (northern, north-western, and north-eastern Hungary) in September and November, 1938, and March, 1939 ...	1,503	(933)
Sections taken over from Roumania (eastern Hungary and Transylvania) in September, 1940	2,237	(1,389)
Lines in Hungarian-occupied Jugoslavia, April, 1941	1,050	(652)
Totals	12,646	(7,853)

The recently-issued report of the Hungarian State Railways for 1940 said that the whole system was working from September 15, 1940, with the exception of 47 km. (29 miles). A 16-km. (10-mile) section of narrow-gauge connecting line was taken in hand without delay to join the railways of northern Transylvania with the main Hungarian system, and was opened on December 15, 1940. This link is between Targu Muresh (or Marosvasarhély in Hungarian) and Lechinta (Szazkelence in Hungarian) *via* Band, and is 97 km. (60 miles) in length. The southern part existed when the territory belonged to Roumania, and it is the northern section that was built by the Hungarians after the readjustment of the Roumano-Hungarian frontier (see THE RAILWAY GAZETTE of April 4, 1941, page 405).

A more satisfactory link will be provided eventually by a single-track standard-gauge main line, 48 km. (30 miles) long which is being built by the Hungarian State Railways to connect Saratel (Szeretfalva in Hungarian) on the Budapest—Cluj Bistritza main line, with Deda. This line, which is the most important railway work undertaken in Hungary for many years, crosses a difficult mountain zone. The work was begun in the spring of 1941, and 21,000 men are stated to be employed on it with a view to completing the link during 1942. The first section, from Saratel to Nagysajo, 18 km. (11 miles) long, was opened (for service trains only) just before Christmas, 1941.

The line comprises 181 overbridges and underbridges, and four major viaducts the longest of which (262 ft.) is near Deda. Apart from four steel bridges, all bridges will be of reinforced concrete. The central section of the line, near Monorfalva, crosses a mountain ridge by two tunnels, 1,640 ft. and 3,050 ft. long respectively. The latter will be the longest railway tunnel in Hungary; it has already been pierced and is being lined at present. Some 1,600 road vehicles, including 110 motor lorries, are said to be employed in removing the spoil. Difficulties in the building of the line have been enhanced by the sliding clay soil.

In addition to the narrow-gauge con-

necting line mentioned above, there is a bus service joining the existing standard-gauge railways, which runs in connection with the trains. It extends from Saratel to Reghin (Szazregén), a distance of 63 km. (39 miles).

Frontier Traffic

Since the first agreement concluded between Roumania and Hungary (see our issue of February 13, 1942, page 225), providing for Roumanian trains to cross Hungarian territory between Palanca and Sanpaul, and Hungarian trains to cross the Roumanian section between Tunel and Sanpaul, a new agreement has been made enabling Roumanian trains to use the Palanca—Uzon line.

Questions in Parliament

Below are summarised Answers to Questions in Parliament affecting transport. The Minister concerned and the date of the Answer are given in parentheses

Hours of Workmen's Fares

I have considered the representations made by the Borough Council of Southall and the Southall Trades Council and endorsed by many other County Borough Councils, asking for the hours during which workmen's fares are issued to be extended until 8.30 a.m., and that such fares be made applicable to all types of vehicles within the area and under the control of the London Passenger Transport Board, but I regret that I do not think it wise to modify the present practice. If workmen's tickets were issued up to 8.30 a.m. in the London area, they would be used by many people who now take season and ordinary tickets, and the purpose of the specially low fare allowed on workmen's tickets would thus be defeated. The change might also cause passengers who now travel before 8 a.m. to travel later, and might thus lead to still greater pressure on services which at their loading peak are already heavily over-taxed. The extension of workmen's tickets to London Transport buses would divert traffic to those buses, and would thus lead to a demand for additional vehicles and staff, and to an increased consumption of motor fuel and tyres. For these reasons, I regret that I do not feel able to agree to such a change. (Mr. P. J. Noel-Baker, Joint Parliamentary Secretary to the Ministry of War Transport, June 30).

Petrol Allowance

A motorist who wishes to appeal against a decision by an Area Petroleum Officer in respect of an issue of petrol coupons should address any appeal in the first instance to the Divisional Petroleum Officer. If he still feels unable to accept the award of that officer, he should address a further appeal to him with the request that it should be submitted to higher authority. Such an appeal should be made only if the motorist is genuinely satisfied that he cannot, even at personal inconvenience, cover essential needs on the petrol allowance granted by the Divisional Office. (Major G. Lloyd George, Minister of Fuel & Power, June 30).

Laid-up Motor Vehicles

The cost of storing essential parts of motor vehicles, required to be deposited with the police, falls upon the Police Fund, and any reasonable expenditure for this purpose will rank for the usual Exchequer grant. The question of requisitioning the tyres of laid-up motor vehicles is under consideration with the Minister of Supply. The plans regarding the requisition of tyres of laid-up cars have not yet been announced, but it is not anticipated that they would prove an adequate substitute for the Regional Commissioner's Direction for the immobilisation of unlicensed cars. The relation of the two schemes is, however, being borne in mind; and any necessary modifications in the Ministry of Home Security arrangements will be made. (Miss Ellen Wilkinson, Parliamentary Secretary to the Ministry of Home Security, June 30).

New Government Departments

The number of whole-time non-industrial staff employed at April 1, 1942, in the departments which have been established since the war is as follows: Ministry of War Transport, 13,611; Ministry of Economic Warfare, 1,320; Ministry of Food, 35,811; Ministry of Information (including 11,231 in the Postal & Telegraph Censorship Department), 13,488; War Damage Commission, 1,638; Ministry of Aircraft Production, 13,784; Office of Minister of Production, 335. There is also the Petroleum Department with a staff of 2,455 which now forms part of the Ministry of Fuel & Power, for which figures are not available at present. Some of these departments, such as the Ministry of War Transport and Ministry of Aircraft Production, are carrying on duties which were performed by pre-war departments so that the numbers given include many staff transferred from pre-war departments, and it would be a mistake to assume that the cost of the departments is due solely to war activities. On the other hand, many departments, such as the Ministry of Labour, Ministry of Supply, and Board of Trade, which were established before the war, have greatly expanded during the war and have taken on new duties. It would be impossible without unjustified expenditure of time and labour to assess the cost of the strictly wartime functions of departments. (Captain H. F. C. Crookshank, Financial Secretary to the Treasury, June 30).

Additional Trains

The companies have been instructed that they may run additional trains where required during the summer months, provided that no train is run that is likely to interfere with essential freight traffic; and that the number of additional trains, if any, run in connection with local holidays and similar occasions shall in no circumstances exceed the number run on the same occasion last year. (Sir Arthur Salter, Joint Parliamentary Secretary, Ministry of War Transport, July 8).

Railway Travel

The Minister of War Transport is for the present mainly relying on appeals to the public to refrain from all unnecessary travel, especially long distance travel. A large number of cheap fares have been cancelled and others restricted to comparatively short distances. Only such limited train services as will not impede essential freight movement can be run and in no circumstances will this limit be exceeded. Although some additional trains had been added, they would not be added in conditions in which they could impede essential freight movement. (Sir Arthur Salter, July 8).

Rhodesian Railways

On June 3 the Legislative Assembly of Southern Rhodesia accepted a resolution that in the opinion of the assembly the public transport system of the Colony should be acquired by the State. It is proposed that this matter should be raised at the Railway Conference which the three Governments interested in the Rhodesian railway system had previously agreed should be held to discuss certain other railway questions. (Mr. Harold Macmillan, Under Secretary of State for the Colonies, July 8).

Railway Warrants for Armed Forces

Although the proposal to issue to the Armed Forces a form of warrant which shall be valid as a railway ticket and so obviate delay at booking offices presents certain difficulties, it is being actively pursued and I am hopeful that a decision will shortly be reached. (Sir A. Salter, July 8).

British and Irish Railway Stocks and Shares

Stocks	Highest 1941	Lowest 1941	Prices July 10, 1942	Prices Rise/Fall
G.W.R.				
Cons. Ord.	43¾	30½	46½	+ 2½
5% Con. Pref. ...	109¼	83½	107	+ ½
5% Red. Pref. (1950)	105½	96½	106	—
4% Deb.	113¾	102½	107	—
4½% Deb.	115	105⅝	108½	—
4½% Deb.	121½	112	114½	—
5% Deb.	132	122	127½	—
2½% Deb.	70	62⅜	72½	—
5% Rt. Charge ...	129½	116	124½	—
5% Cons. Guar. ...	128	110½	124	+ 1
L.M.S.R.				
Ord.	17½	11	20	+ ¾
4% Pref. (1923) ...	53	33½	54	+ 1½
4% Pref.	68½	48¼	70	+ 1½
5% Red. Pref. (1955)	97⅝	77	99½	—
4% Deb.	105¾	97	104	+ 2
5% Red. Deb. (1952)	110½	106½	109½	—
4% Guar.	100	85¾	100	+ 1½
L.N.E.R.				
5% Pref. Ord. ...	3¾	2¾	4½	+ ⅜
Def. Ord.	2	1¼	2⅜	+ ¼
4% First Pref. ...	52½	33	53½	+ 2
4% Second Pref. ...	19⅜	10	22¾	+ 1¼
5% Red. Pref. (1955)	79½	52	88	—
4% First Guar. ...	90½	74½	94	+ 1
4% Second Guar. ...	80½	59	83½	+ 1
3% Deb.	79¼	68½	79	+ 1½
4% Deb.	104	91¼	103½	+ 2
5% Red. Deb. (1947)	106	102¼	104½	—
4½% Sinking Fund Red. Deb.	103½	99 11/16	103½	—
SOUTHERN				
Pref. Ord.	65½	43½	65	+ 2½
Def. Ord.	15⅝	9	17	+ 1
5% Pref.	107	77½	106½	+ ½
5% Red. Pref. (1964)	107	89½	108½	—
5% Guar. Pref. ...	128	111	123½	+ 1½
5% Red. Guar. Pref. (1957)	114¾	107½	110¾	— 1
4% Deb.	112	102¼	106½	+ 1
5% Deb.	130¼	119	127½	—
4% Red. Deb. (1962–67)	108½	102	108½	—
4% Red. Deb. (1970–80)	108¾	102¼	107½	—
FORTH BRIDGE				
4% Deb.	99¾	90½	105	— 2
4% Guar.	99	85¼	103¼	—
L.P.T.B.				
4½% "A"	120 13/16	109½	112½	—
5% "A"	130⅛	115½	124½	—
4½% "T.F.A." ...	103¾	99½	100	—
5% "B"	117	102	112½	—
"C"	46¾	28¾	41	—
MERSEY				
Ord.	24¾	19¼	22	—
4% Perp. Deb. ...	100	90	100	—
3% Perp. Deb. ...	73½	63	78	—
3% Perp. Pref. ...	58	51½	58	—
IRELAND				
BELFAST & C.D.				
Ord.	4	4	9	—
G. NORTHERN				
Ord.	14½	3	22	+ ¾
G. SOUTHERN				
Ord.	14½	5	17¾	—
Pref.	17	10	17¾	+ ¾
Guar.	44	16	39	+ 1
Deb.	61	42	63¾	+ ¾

§ ex dividend

Notes and News

Mauritius Government Railways.—Financial results of the Mauritius Government Railways for the year ended June 30, 1941, were :—Receipts Rs. 1,919,775 and expenditure Rs. 1,992,257, leaving a loss for the year of Rs. 72,482.

Newfoundland Railway.—On April 26 the Newfoundland Railway began its summer schedule of three trains weekly with expresses leaving St. John's on Sundays, Tuesdays, and Thursdays, and arriving at Port-aux-Basques one day later. It is still hoped to inaugurate a daily service across the island when sufficient new rolling stock is received.

The Future of Railways.—In the House of Commons on July 14, Sir Arthur Salter, Joint Parliamentary Secretary to the Ministry of War Transport, said that a preliminary survey was being made of post-war transport problems, including the position of railways. Before any proposal for future policy was formulated, full opportunity would be given to all interested and concerned to express their views.

Entre Rios Railways Co. Ltd.—The directors expect that if nothing unforeseen occurs, the company will be able to make in October a further payment of interest on account of the arrears accrued on the 4 per cent. debenture stock. The last payment on this stock was on May 16, of 2 per cent. actual for the half-year to September 30, 1938, plus interest on the arrears at per cent. per annum, making £2 7s. 3d. per cent., less tax. The joint special committee of debenture holders has extended the interest moratorium for one year to July 1, 1943.

New Canadian Air Lines.—A regular air mail service between Montreal and Quebec, *via* Three Rivers and Cap de la Madeleine, was opened on April 16 by Quebec Airways Limited, a constituent of Canadian Pacific Air Lines Limited ; the regular passenger service between Montreal and Quebec began in December last. A daily air service for passengers, mail, and express was begun on May 1 by Trans-Canada Air Lines (the Canadian National associate) between Moncton (New Brunswick) and St. John's (Newfoundland), *via* Sydney (Nova Scotia) ; connection with the Transcontinental line is made at Moncton.

Vickers-Armstrongs and Variable Speed Gear.—In order to co-ordinate more closely the activities of Vickers-Armstrongs Limited, it has been arranged that it should forthwith take over as a going concern the business of The Variable Speed Gear Limited, the whole of the capital of which company is held by Vickers-Armstrongs Limited. The business will be conducted by a separate department of the Elswick Works, but by the same management and personnel as heretofore with a view to maintaining the close relations already established. The symbol " VSG " will still be associated with the products of Variable Speed Gear Limited, and the London representation will be continued.

Bombay, Baroda & Central India Railway Company.—The Bombay, Baroda & Central India Railway Act, 1942, having received the Royal Assent on June 11, notice is given by the Solicitors to the company (Messrs. Dollman & Pritchard, 37, Mecklenburgh Square, W.C.1) that particulars of any claims upon the company are required to be sent to " Guildcroft," Epsom Road, Guildford, Surrey, or to the Solicitors above-named, forthwith, and in any event on or before Ju y 31. Thereafter the company will be at libertyl to distribute its assets in accordance with the provisions of the Act having regard only to the claims of which it then has notice.

Municipal Transport in Cleveland.—The local transport in Cleveland, Ohio, passed into the hands of the Municipality on April 29. In the early years of this century the grant of a concession to private enterprise attracted very considerable attention, but eventually terms were agreed under which the system has been operated for more than 32 years.

Charles Roberts & Co. Ltd.—The directors have declared an interim dividend of 15 per cent., less tax, on the ordinary stock for the year ended March 31, 1942, payable 22. They also announce that it is not intended to recommend any further dividend on the ordinary stock for that year, at the forthcoming annual general meeting.

Sir John Norton-Griffiths & Co. Ltd.—Pursuant to Section 244 of the Companies Act, 1929, general meetings of the members and of the creditors of the above-named company, now in voluntary liquidation, will be held on July 29 at the offices of Messrs. Wild, Collins & Grosse, 66, Cheapside, E.C.2. Section 244 provides that in the event of a voluntary winding up continuing for more than one year, it is the duty of the liquidator to call meetings of the company and of the creditors at the end of each year.

Bus Stations in London and Maidstone.—Speaking recently at the 31st annual general meeting of the Maidstone & District Motor Services Limited, Colonel H. I. Robinson, the Chairman, called attention to the fact that the assets of the company had increased by over £30,000 in the value of freehold land and buildings. This was due mainly, he said, to the acquisition of a very fine site in Maidstone upon which the company hoped to build a bus station worthy of the town of its origin when circumstances permitted it. The company's investment in its associate, London Coastal Coaches Limited, was increased by about £30,000. This was because the Maidstone & District had provided a part of a loan required by London Coastal Coaches to enable it to repay an outstanding mortgage on its property. It was considered advisable that any loan at this time to an associated company should be free from obligation to outside interests.

" Glo-Pass " Security System.—Colloidal Research Laboratories Limited has issued a pamphlet which describes a system of coating passes with transparent lacquer, which enables them easily to be inspected by night, and which renders difficult their forgery. Large numbers of workers thus can have their passes examined and proceed into the factory with a minimum of delay, and, at the same time, the entry of unauthorised persons is guarded against. The lacquer, which has been invented and introduced by Colloidal Research Laboratories Limited, is invisible in ordinary light, but is activated by the rays of a special " black light," and this adds to the value of the system, in that the inspection of passes can be carried out under blackout conditions. Immediately the lacquer is removed from the rays of the " black light," its fluorescence disappears ; there is no afterglow. This characteristic, and the fact that it glows with a peculiar tinge, render an object coated with the lacquer difficult, if not impossible, to imitate.

J. Stone & Co. Ltd.—Trading profit for the year 1941, including interest on investments and after providing for taxation, amounted to £474,151, against £396,052. After making provision for depreciation, for buildings replacement and repairs, and for directors' fees, the net profit is £214,109 (£208,521). The amount brought in is £251,406. The dividend on the £600,000 of 6½ per cent. preference shares required £39,000, and the dividend on the £600,400 of ordinary shares, which are privately held, is again 25 per cent., leaving £276,415 to be carried forward.

Great Southern Railways (Eire).—For the 26th week of 1942 the Great Southern Railways (Eire) report passenger receipts of £43,779 (against £47,110), and goods receipts of £56,786 (against £48,024), making a total of £100,565 (against £95,134), for the corresponding period of the previous year. The aggregate receipts to date are passenger, £871,538 (against £967,254), goods, £1,541,648 (against £1,300,130), making a total of £2,413,186 (against £2,267,384).

Negligence, but not Wilful Misconduct.—In the case of Hartstoke Fruiterers Limited *v.* London Midland & Scottish Railway Company, heard by Mr. Justice Hallett in the King's Bench Division, judgment was given on July 7 in favour of the railway company, with costs. The action related to a consignment of bananas carried at owners' risk, subject to the Standard Terms & Conditions settled by the Railway Rates Tribunal. Condition 3 absolved the company from liability except upon proof of wilful misconduct, and Condition 9 required the company to give notice of arrival of a consignment at the station of destination. Delay in giving the necessary notice to the consignee caused deterioration to the bananas, for which damages were claimed. The judge said it was plain that defendants had committed a breach of Condition 9 in not giving notice within a reasonable time. He considered that the terms of Condition 3 were wide enough to give protection against such a breach, and that—the onus of proving wilful misconduct being on the plaintiffs—the evidence fell far short of that required for such proof.

Contracts and Tenders

The Bengal-Nagpur Railway has placed an order, to the inspection of Messrs. Wolfe Barry, Robert White & Partners, with Robert Stephenson & Hawthorns Limited, for 7 steel fireboxes.

The Peruvian Corporation has placed a contract with J. & H. McLaren Limited for diesel-engine spare parts for the Chimbote Railway.

The Tata Iron & Steel Co. Ltd. the foremost undertaking of its kind in India commenced operation of wheel, tyre, and axle plant last November, according to the Indian press which adds that wheels, tyres, and axles will be manufactured for the Indian Railway Board.

The journal of the Anglo-Egyptian Chamber of Commerce for May states that Mohamed Abdel Moneim El Dib Bey, its representative in Egypt, says that he has been approached recently by several local undertakings with a view to supplying them with names of British firms wishing to have representatives in Egypt. These inquiries have been principally for machinery. The Chamber offers to pass information of the kind required to El Dib Bey and also to forward pamphlets or advertisements or samples—so far as existing controls permit—of productions which members of the Chamber wish to have displayed in the Alexandria office.

Railway Stock Market

Stock Exchange markets have presented a cheerful trend, sentiment having been governed mainly by the renewed rise in British Government securities. Although improvement in the volume of business was not substantial, the upward movement in values was fairly widely spread. In most sections, stock remained in very short supply, and with little selling in evidence, prices again showed strong response to moderate improvement in demand. The rising tendency in all classes of securities has had the effect of drawing further attention to the attractive yields still obtainable in the home railway market. At the time of writing, further good gains have been recorded in the junior stocks in advance of the impending interim dividend decisions, market views in connection with which have been mentioned in these notes. Sentiment was also assisted by market and other estimates as to the extent net revenue of the railways may be running above that of a year ago. Nevertheless, it is realised that this will not have any influence on the rental received by the railways which is, of course, fixed under the wartime financial agreement. The rise in British Funds and other leading investment stocks had the effect of drawing attention to the favourable yields still obtainable on home railway prior charges, and the latter have participated in the upward trend in prices. Nevertheless, in some instances, they are below the levels ruling a few weeks ago, and would appear to be rather moderately priced in comparison with other high class stocks with similar investment status. It is being pointed out that under the financial agreement, the interest requirements of the debentures and other prior charges can be considered as virtually guaranteed by the Government during the war and one year afterwards. A somewhat similar position also exists in regard to the junior stocks unless future air raid damage were on a very heavy scale.

In accordance with the better market trend, Great Western ordinary has risen further to 46¾ at the time of writing, which compares with 45½ a week ago. Great Western guaranteed stock was 124½, compared with 123, and the preference stock 107½, compared with 106½. Great Western debentures rallied to 107, a gain of a point on balance for the week; a few weeks ago, however, they were 111. L.M.S.R. ordinary further rallied from 19⅞ to 20¼, the 1923 preference from 53 to 54½, and the senior preference from 69 to 70½. L.M.S.R. guaranteed attracted attention and was two points higher at 100½; the 4 per cent. debentures were 104, as compared with 102½ a week ago. L.N.E.R. issues also received a good deal more attention, particularly the second preference which rose further from 22½ to 23; the view has grown that the total dividend for the year may be slightly higher at 2½ per cent. L.N.E.R. first preference showed improvement from 52 to 53½, and would still appear to be undervalued compared with L.M.S.R. 1923 preference. L.N.E.R. guaranteed issues were also higher on balance, the firsts being 94, compared with 92½ a week ago, and the seconds 84, compared with 82½. L.N.E.R. 3 per cent. debentures were 79, and the 4 per cent. debentures 103½. At the time of writing, Southern preferred has risen from 64 to 65¼, and the deferred stock from 16⅞ to 17¼, while the preference stock was a point higher at 107, the guaranteed 124½, compared with 123, and the debentures 106½ compared with 105½. London Transport "A" and "B" stocks moved higher; the "C" was 42, compared with 40½ a week ago. Having regard to the weight of money awaiting investment, and the scarcity of stock, the disposition is to take the view that over a period, all classes of securities are likely to move higher in price.

Business in Argentine railway debentures tended to broaden and prices responded; Central Argentine 4 per cents and 5 per cents were both 37½, while B.A. Gt. Southern 4 per cents have risen on the week from 56 to 57. Elsewhere, Leopoldina debentures and Antofagasta preference were again better. Canadian Pacific tended to improve.

Traffic Table and Stock Prices of Overseas and Foreign Railways

	Railways	Miles open 1941–42	Week Ending	Traffic for Week: Total this year	Traffic for Week: Inc. or Dec. compared with 1941	No. of Weeks	Aggregate Traffics to date: Totals: This Year	Aggregate Traffics to date: Totals: Last Year	Aggregate Traffics to date: Increase or Decrease	Shares or Stock	Prices: Highest 1941	Prices: Lowest 1941	Prices: July 10, 1942	Prices: Yield% (See Note)
				£	£		£	£	£					
South & Central America	Antofagasta (Chili) & Bolivia	834	5.7.42	18,330	+ 4,350	27	569,210	482,520	+ 86,690	Ord. Stk.	10¾	3¼	9	Nil
	Argentine North Eastern	723	4.7.42	ps. 211,900	+ ps. 20,600	1	ps. *106,500	ps. 135,200	– ps. 28,700	,,	4	1	4½	Nil
	Bolivar	174	May, 1942	4,605	+ 405	21	23,063	19,132	+ 3,931	6 p.c. Deb.	5	5	10	Nil
	Brazil	—	—	—	—	—	—	—	—	Bonds	8	2½	13	Nil
	Buenos Ayres & Pacific	2,801	4.7.42	ps. 1,526,000	– ps. 21,000	1	ps. *1,004,000	ps. 1,242,000	– ps. 238,000	Ord. Stk.	7¾	1¾	4½	Nil
	Buenos Ayres Great Southern	5,080	4.7.42	ps. 2,079,000	– ps. 203,000	1	ps. *1,181,000	ps. 1,606,000	– ps. 425,000	Ord. Stk.	10¼	3¼	8	Nil
	Buenos Ayres Western	1,930	4.7.42	ps. 1,045,000	+ ps. 153,000	1	ps. *491,000	ps. 655,000	– ps. 164,000	,,	9	2¼	7	Nil
	Central Argentine	3,700	4.7.42	ps. 2,083,900	+ ps. 1,832,000	1	ps. *961,800	ps. 1,293,850	– ps. 332,050	,,	8¼	2⅛	6½	Nil
	Do.	—	—	—	—	—	—	—	—	Dfd.	9½	½	3½	Nil
	Cent. Uruguay of M. Video	972	27.6.42	18,475	– 10,249	52	1,334,359	1,237,427	+ 96,932	Ord. Stk.	9¼	1	4¼	Nil
	Costa Rica	262	May, 1942	15,651	– 3,810	46	228,220	218,358	+ 9,862	Stk.	15½	11¼	13	Nil
	Dorada	70	May, 1942	15,882	+ 2,982	21	63,546	62,100	+ 1,446	1 Mt. Db.	97	97	88½	6½
	Entre Rios	808	4.7.42	ps. 290,900	– ps. 2,300	1	ps. *153,400	ps. 200,500	– ps. 47,100	Ord. Stk.	6½	½	5½	Nil
	Great Western of Brazil	1,030	4.7.42	9,100	+ 1,900	27	265,800	250,900	+ 14,900	Ord. Sh.	11/–	1/–	¾	Nil
	International of Cl. Amer.	794	May, 1942	$114,834	– $7,783	20	$728,750	$552,133	+ $176,617	—	—	—	—	—
	Interoceanic of Mexico	—	—	—	—	—	—	—	—	1st Pref.	⅜	6d.	½	Nil
	La Guaira & Caracas	22¾	June, 1942	5,860	+ 785	25	37,990	35,220	+ 2,770	—	—	—	—	—
	Leopoldina	1,918	4.7.42	33,107	+ 6,632	27	790,130	640,010	+ 150,120	Ord. Stk.	4	¼	4½	Nil
	Mexican	483	21.6.42	ps. 300,400	– ps. 8,100	25	ps. 8,325,700	ps. 7,788,000	+ ps. 537,700	,,	⅜	¼	¼	Nil
	Midland of Uruguay	319	Apr., 1942	13,856	+ 1,640	41	136,984	120,202	+ 16,782	—	—	—	—	—
	Nitrate	386	30.6.42	13,004	+ 6,302	25	84,628	53,710	+ 30,918	Ord Sh.	66⅜	1⅛	3⅜	3½
	Paraguay Central	274	4.7.42	$5,000,000	+ $1,309,000	1	*$2,813,000	$3,025,000	– $212,000	Pr. Lt. Stk.	43/–	29	42½	14¼
	Peruvian Corporation	1,059	May, 1942	81,005	+ 17,967	47	833,448	709,504	+ 123,944	Pref.	6½	1⅛	13	Nil
	Salvador	100	May, 1942	c 106,000	+ c 46,000	45	c 959,172	c 743,683	+ c 215,489	—	—	—	—	—
	San Paulo	153½	21.6.42	35,744	– 10,718	25	879,837	927,042	– 47,205	Ord. Stk.	52	24½	51	3½
	Taltal	160	May, 1942	5,490	+ 2,395	23	49,710	30,545	+ 19,165	Ord. Sh.	1	6/–	1⅛	Nil
	United of Havana	1,346	4.7.42	43,121	+ 23,152	1	*21,599	14,662	+ 6,937	Ord. Stk.	2½	⅛	5	Nil
	Uruguay Northern	73	Apr., 1942	980	– 41	41	12,070	11,329	+ 741	—	—	—	—	—
Canada	Canadian National	23,562	30.6.42	2,071,600	+ 503,000	26	33,883,000	28,343,000	+ 5,540,000	—	—	—	—	—
	Canadian Pacific	17,139	30.6.42	1,415,200	+ 233,200	26	24,206,600	19,968,000	+ 4,238,600	Ord. Stk.	13⅞	7⅛	10	Nil
India†	Barsi Light	202	Mar., 1942	15,570	– 390	52	165,217	167,280	– 2,063	—	—	—	—	—
	Bengal & North Western	2,090	May, 1942	281,550	+ 6,732	8	555,000	555,860	– 860	Ord. Stk.	345	253	350½	5½
	Bengal-Nagpur	3,267	10.3.42	263,175	– 127	50	9,354,150	8,504,657	+ 849,493	,,	101	95¾	96	4⅞
	Madras & Southern Mahratta	2,939	Mar. 1942	253,125	+ 25,105	52	7,338,605	6,278,738	+ 1,059,867	,,	105⅞	101¼	99	7⅛
	Rohilkund & Kumaon	571	May, 1942	58,950	– 12,488	8	119,550	140,639	– 21,089	,,	342	290	348½	4⅛
	South Indian	2,402	31.3.42	190,120	+ 43,235	52	5,358,080	4,609,099	+ 748,981	,,	100	87	95	3½
Various	Beira	204	Apr., 1942	80,224	—	30	534,115	—	—	—	—	—	—	—
	Egyptian Delta	607	31.5.42	11,000	+ 4,257	9	64,698	38,668	+ 26,030	Prf. Sh.	1½	29/–	2½	Nil
	Manila	—	—	—	—	—	—	—	—	B. Deb.	68	45	37½	9⅞
	Midland of W. Australia	277	May, 1942	26,845	+ 9,254	41	229,956	167,924	+ 62,032	Inc. Deb.	90½	86½	89½	6
	Nigerian	1,900	25.4.42	51,498	+ 137	4	191,234	240,666	– 49,432	—	—	—	—	—
	Rhodesia	2,442	Apr., 1942	503,217	—	30	3,382,397	—	—	—	—	—	—	– ⅛
	South Africa	13,291	6.6.42	728,222	— 3,707	10	7,268,183	6,913,292	+ 354,891	—	—	—	—	—
	Victoria	4,774	Jan., 1942	1,301,285	+ 378,792	29	7,938,536	6,547,339	+ 80,660	—	—	—	—	—

Note. Yields are based on the approximate current prices and are within a fraction of ½ Argentine traffics are given in pesos
* Aggregate receipts are those for the four days from June 30 † Receipts are calculated @ 1s. 6d. to the rupee § ex dividend